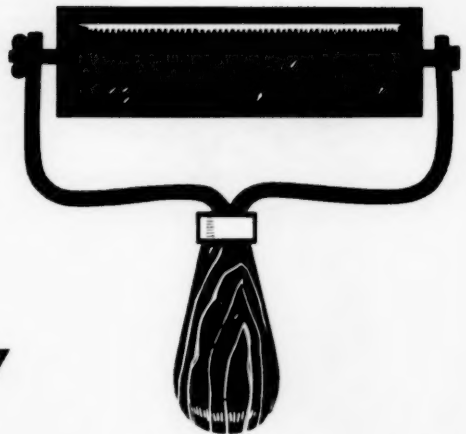


1954

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Publications

CORNELL

Extension Bulletin 47



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List of Publications

INDIVIDUAL copies of the publications from the New York State Colleges of Agriculture and Home Economics, and from the Cornell University Agricultural Experiment Station, at Ithaca, New York, and the New York State Agricultural Experiment Station at Geneva, New York, are free to residents of New York. Not more than twenty (20) individual bulletins will be sent free to one person at one time. Non-residents, except persons engaged in college teaching, extension, or research, are charged for single copies. For publications in quantity, and under certain specific conditions, a charge also is made as required by New York State law. Charges listed with the publications are based on the actual cost of printing. Postage stamps are accepted for payment not in excess of twenty-five (25) cents.

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James D. Luckett, Editor for the Geneva Station

A publication of the
New York State College of Agriculture,
a unit of the State University of New York,
at Cornell University

Agriculture

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(There is no free distribution of account or record books. The following prices are based on the costs of printing and therefore apply either to single copies or to quantities.)

- Farm cash account (25¢)
- Farm inventory for five years (10¢)
- How to keep an account with dairy cows (10¢)
- Poultry account book (25¢)
- Receipts and disbursements record for milk-marketing cooperatives (\$1)
- Field and crop record (25¢)

AGRICULTURAL ECONOMICS

Farm Management

- E 406 Land use in New York *Hart* (5¢)
- E 656 Suggestions on how to pick up potatoes *Bierly and Hardenburg* (5¢)
- E 666 Are you a good boss? *Bradt* (5¢)
- E 679 Getting started in poultry farming *Darrah and Bruckner* (5¢)
- E 713 Make your poultry farm pay *Darrah* (5¢)
- E 868 More efficiency on the poultry farm *Earle* (5¢)
- *E 889 Broiler growing in New York State *Baker* (10¢)
- *E 892 Father and son arrangements on the farm *Smith and Warren* (10¢)
- P 613 An economic study of land utilization in Montgomery County, New York, 1932 *Hill and Blanch*, (10¢)
- P 640 An economic study of land utilization in Chemung County, New York *LaMont* (25¢)
- P 642 An economic study of land utilization in Broome County, New York *LaMont* (15¢)
- P 647 An economic study of part-time farming in the Elmira and Albany areas of New York, 1932 and 1933 *Hood* (15¢)
- P 654 An economic study of land utilization in Chenango County, New York *Tyler* (15¢)
- P 674 An economic study of land utilization in Steuben County, New York *Keeppper* (15¢)
- P 675 An economic study of land utilization in Rensselaer County, New York *Beck* (15¢)
- P 679 Economic studies of vegetable farming in New York. III. Truck-crop production and prices *Misner* (10¢)
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- P 689 An economic study of land utilization in Clinton County, New York *White* (15¢)
- P 704 Types of farming in New York *Beck* (5¢)
- P 707 An economic study of land utilization in Wyoming County *Kling* (15¢)

For bulletins E, J, P, and S write the College of Agriculture, Ithaca, N. Y.

- P 727 An economic study of land utilization in Yates County, New York *Woodin* (15¢)
- P 728 An economic study of farming in Tompkins County, New York, 1937 *Henderson* (10¢)
- P 747 Some facts concerning costs of operation of farm motor trucks *Rasmussen and Williamson* (5¢)
- P 771 Measurements and weights of one hundred cows in the Cornell dairy herd *Misner* (5¢)
- P 781 An economic study of land utilization in Schuyler County, New York *Darrah* (15¢)
- P 782 Thirty years of farming in Tompkins County, New York *Misner* (10¢)
- P 826 Apple quality and its effect on price and rate of sale *Blanch* (10¢)
- P 842 The cost of producing milk, Montgomery County, 1944-45 *Cunningham* (5¢)
- P 864 Commercial poultry farm management in New York State, 1946-47 *Kearl* (5¢)
- P 887 An economic analysis of large dairy farms, New York, 1949-50 *Ashe* (10¢)
- LC 1 An economic classification of rural land, Broome County, New York *Pasto and Conklin* (5¢)
- LC 2 An economic classification of rural land, Seneca County, New York *Conklin* (5¢)
- LC 3 An economic classification of rural land, Cattaraugus County, New York *Conklin and Lucas* (5¢)
- Factors affecting seasonal milk production and their effect on producers' costs and returns *Maine bulletin 459* (10¢)

Government (see Taxes)

Marketing

- E 416 Handling eggs for market *Botsford* (5¢)
- P 620 Marketing and distribution of certain perishable farm products in the lower Hudson Valley *Hopper and Pierce* (5¢)
- P 700 An economic study of the marketing of western New York potatoes by motor truck *Findlen* (5¢)
- P 721 An economic study of fruit and vegetable wholesaling and jobbing firms in New York City *Gearreald* (10¢)
- P 735 An analysis of dealer's sales of milk and cream in the New York market, 1933-1938 *Blanford* (5¢)
- P 737 Some facts concerning country fruit and vegetable auctions in Eastern Seaboard States *Cake* (10¢)
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- P 794 Retail and wholesale distribution of apples in up-state New York *Cravens* (5¢)
- P 801 Regional markets in New York State *Nicholson* (5¢)
- P 815 Fruit and vegetable stores as retail outlets for fruit *Rasmussen, Quitsland, and Cake* (10¢)
- P 816 Consumer demand for meat, Syracuse, New York, 1942 *Anderson* (5¢)
- P 820 Hucksters and pushcart operators as retailers of fruit *Rasmussen, Quitsland, and Cake* (10¢)
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- P 858 Marketing practices and egg quality *Earle and Darrah* (10¢)

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- P 861 An analysis of frozen food purchased in three New York areas *Scott* (10¢)
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 — What makes the market for dairy products? Wisconsin bulletin 477 (10¢)
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Prices

- P 773 Changes in the prices of apples and other fruits *Woodin* (5¢)
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 E 777 Elections in rural New York *Bratton and Lutz* (5¢)
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AGRICULTURAL ENGINEERING

Construction

- E 94 Fitting the farms saws *Roehl* (5¢)

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- E 786 Farm refrigerated apple storages *Gray* (15¢)
- E 807 The farm shop and its equipment *Foss* (10¢)
- E 845 Ventilate your dairy stable with electric fans *Turner* (5¢)
- E 847 Know your concrete *Boyd* (10¢)
- E 850 Soldering *Foss* (5¢)
- *E 875 Farm drainage *Goodman* (15¢)
- *S 17 Storing corn in cribs *Hoff* (15¢)

Machinery and Tools

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- E 417 Binder adjustments *Jennings* (5¢)
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- E 848 Care of electric motors *Wright* (5¢)
- E 850 Soldering *Foss* (5¢)

Power and Light

- E 618 Drying fruits and vegetables at home *Prudent and Wright* (5¢)
- E 660 A rotary cutting knife to control the spread of potato ring rot *Roehl and Knorr* (5¢)
- E 673 Protection for electric motors *Shepardson* (5¢)
- E 734 Electric heating cable for a poultry waterer *Turner* (5¢)
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- *E 879 Emergency equipment for electric power failures *Turner* (5¢)

ANIMAL HUSBANDRY

Butchering (see Meat)

Cattle

- E 151 Dairy-stable ventilation *Goodman* (10¢)
- E 363 Feeding the dairy cow efficiently *Turk and Crandell* (15¢)
- E 737 Sterility and delayed breeding in dairy cattle *Asdell* (5¢)
- E 761 Raising dairy calves and heifers *Turk and Burke* (10¢)

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- P 589 A study of the effect of removing foremilk on the fat content of the remainder of the milking *Ross and Winther* (5¢)
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P 890 Comparison of methods of using pasture for fattening steers *Miller and Morrison* (15¢)
G 645 Proved sires and partially proved dams in breeding dairy cattle for production *Dahlberg* (10¢)

Diseases

- E 737 Sterility and delayed breeding in dairy cattle *Asdell* (5¢)
E 818 Bovine brucellosis *Gilman* (5¢)
C 147 Chronic mastitis *Hucker* (5¢)

Goats

- E 414 The dairy goat *Asdell and Marquardt* (10¢)

Sheep

- E 828 Sheep production *J. A. Willman* (15¢)
P 834 Lamb-feeding experiments *Willman, Morrison, and Klosterman* (10¢)
P 844 The sheep tick: materials and equipment for its control *Schwardt and Matthyse* (10¢)

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- E 764 The climate of New York State *Mordoff* (25¢)

CLOVER (see Crops)**COMMUNITY ORGANIZATION (see Country Life)****CORN (see Crops, and Vegetables)****CONSERVATION**

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Forestry

- E 226 Forest planting on the farm *Guise* (10¢)
- E 397 Maple sirup and sugar *Cope* (5¢)
- E 539 Black locust for posts *Cope* (5¢)
- E 716 Care and culture of the farm woodlot *Cope* (5¢)
- E 722 Trees and products of farm woodlands *Cope* (10¢)
- E 747 Home-grown lumber for farm buildings *Winch* (10¢)
- E 867 Care of forest plantations on farm lands *Winch* (10¢)
- J 39 Log scaling and timber estimating *Pond and Winch* (10¢)
- J 43 Woodlot improvement — managing the woodlot *Cope and Winch* (10)
- J 77 Conserve our soil, forest, and wildlife *Fales, Wilson, Winch, and Palmer* (20¢)
- J 85 Know your trees *Cope and Winch* (15¢)
- J 90 Future forests *Winch* (5¢)

Soil erosion

- E 438 The control of soil erosion in New York *Gustafson* (10¢)
- E 744 The control of soil erosion on Long Island *Gustafson, Lamb, and Wilson* (15¢)
- E 762 Maintain the diversion terrace *Kerr and Wilson* (5¢)
- E 808 Diversion terraces *Wilson and Kerr* (5¢)
- P 811 Experiments in the control of soil erosion in southern New York *Lamb, Andrews, and Gustafson* (5¢)
- G 701 Orchard covers and their relation to soil conservation *Collison and Carleton* (10¢)

Miscellaneous

- *J 103 Inviting bird neighbors *Sherwood and Gordon* (10¢)

COUNTRY LIFE

- E 249 Elements of debating *Peabody* (5¢)
- E 298 Songs *Zansig* (5¢)
- E 444 Diagnosing rural-community organization *Ensminger* (10¢)
- E 445 School centralization and the rural community *Sanderson* (5¢)
- E 652 Suggestions to persons who plan to farm or live in the country *Hart* (5¢)
- E 854 Elements of organized debate and discussion *Peabody and Sargeant* (10¢)
- E 864 New York farmers' opinions on agricultural programs *Moe* (10¢)
- P 522 The family finances of 195 farm families in Tompkins County, New York, 1927-28 *Canon* (20¢)
- P 582 Relation of cities and larger villages to changes in rural trade and social areas in Wayne County, New York *Hoffsommer* (10¢)
- P 583 The relationship of the open-country population of Genesee County, New York, to villages and cities *Taylor* (10¢)
- P 584 Relationships of open-country families of Onondaga County, New York, to socio-economic areas, villages, and cities *Paxson* (10¢)
- P 607 Mobility of rural families. Part I. Changes in residence and in occupation of rural husbands and wives in Genesee County, New York *Anderson* (5¢)
- P 615 Clothing purchased by farm families in Tompkins County, New York, 1927-28 *Blackmore* (5¢)
- P 623 Mobility of rural families. II. Changes in residence and in occupation of sons and daughters in rural families in Genesee County, New York *Anderson* (10¢)

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- P 699 The influence of the central rural school on community organization *Stromberg* (5¢)
- P 713 The composition of rural households *Anderson* (5¢)
- P 736 Selective factors in migration from a New York rural community *Gessner* (10¢)
- P 760 Rural public-welfare administration and finance in New York *Lutz* (10¢)
- P 786 Population trends in New York State, 1900 to 1940 *Anderson* (10¢)
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- P 840 Personal and family values in the choice of a home *Cutler* (15¢)
- P 848 A study of former students of vocational agriculture in the Watkins Glen area *Theodoron* (10¢)
- P 871 Rural organization in Oneida County, New York *Hay and Polson* (20¢)
- P 872 Housing preferences of farm families in the Northeast *Montgomery* (10¢)
- *P 899 Administrative practices and personal adjustments in homes for the aged *Taietz* (10¢)
- S 13 Rural fire protection—a report *Foss* (20¢)

Dramatics

- E 449 How to choose a play and how to write one *Gard, Albright and Drummond* (5¢)
- E 627 How to prepare and act a part *Albright* (5¢)
- Champeen of the canawl—a New York State play *Kamarch* (25¢) **No free distribution**

CROPS

Field Crops

- *E 858 Improved field crop varieties—1953 (5¢)
- Field and crop record (25¢) **No free distribution**

Barley

- G 681 Planting value of oats and barley collected from farmers' drills and granaries *Crosier* (15¢)

Corn

- *S 17 Storing corn in cribs *Hoff* (15¢)
- G 700 The relation of spacing to yield and to plant and ear development of some yellow sweet corn hybrids in New York *Enzie* (10¢)
- G 705 A descriptive and historical study of some yellow sweet corn hybrids *Enzie* (15¢)

Fertilizers

- E 822 More lime on your land (5¢)
- G 168 Minor elements and crop fertilization *Collison* (5¢)

Hay and Legumes

- E 798 Sudan grass for pasture *VanAlstine and MacDonald* (5¢)
- P 874 Effect of curing methods upon the feeding value of hay *Turk, Morrison, Norton, and Blaser* (5¢)

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Hops

- T 267 The epidemiology and control of downy mildew on hops *Magie* (15¢)
G 687 Trial of new varieties of hops for New York *Harlan* (5¢)
G 708 Disease and insect control on hops *Magie* (10¢)

Soybeans

- E 668 Soybeans (10¢)

Spring Grain

- G 681 Planting value of oats and barley collected from farmers' drills and granaries
Crosier (5¢)

Weeds

- E 721 Sulfuric-acid sprays to control weeds in onions *Newhall, Lawrence, and Justice* (5¢)
G 741 Chemical weed control in peas, sweet corn, and beets grown for processing
Dearborn (30¢)

Wheat

- G 677 Planting value of wheat taken from farmers' drills *Crosier* (10¢)

Vegetables Crops (see Vegetables)**DAIRYING**

- E 131 The separation of cream on the farm *Guthrie* (5¢)
E 723 The manufacture of cultured buttermilk *Kosikowsky and Guthrie* (5¢)
P 589 A study of the effect of removing foremilk on the fat content of the remainder of the milking *Ross and Winther* (5¢)
P 739 The incubation test as an indication of the keeping quality of butter *Naylor and Guthrie* (5¢)
P 754 A comparative study of high-temperature, short-time, and holder pasteurization *Millenky and Brueckner* (5¢)
P 771 Measurements and weights of one hundred cows in the Cornell dairy herd *Misner* (5¢)
P 838 The keeping quality of pasteurized milk *Dahlberg* (5¢)
P 880 A study of the body of cultured cream *Guthrie* (10¢)
— What makes the market for dairy products *Wisconsin bulletin 477* (10¢)

Food Science and Technology (see page 16)**DAIRY BUILDINGS (see Construction)****DAIRY CATTLE (see Cattle)****DAIRY FARMING (see Farm Management)****DEBATING (see Country Life)****DISCUSSIONS (see Country Life)****DISEASES**

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

Animal

- E 337A Pullorum disease *Levine* (5¢)
 E 337C Fowl pox *Levine* (5¢)
 E 737 Sterility and delayed breeding in dairy cattle *Asdell* (5¢)
 E 740 The avian leukosis complex *Levine* (5¢)
 E 818 Bovine brucellosis *Gilman* (5¢)
 C 147 Chronic mastitis *Hucker* (5¢)

Plant

- E 206 The control of diseases and insects affecting vegetable crops *Chupp and Leiby* (25¢)
 E 306 Diseases and insects of small fruits *Mills and Dewey* (10¢)
 E 405 Fire blight and its control *Hildebrand* (5¢)
 E 635 An efficient labor-saving method of steaming soil *Dimock and Post* (5¢)
 E 687 Dutch elm disease control *Welch, Rankin, and Readio* (5¢)
 E 712 Nematodes parasitic on the Irish potato *Mai and Cunningham* (5¢)
 E 870 The golden nematode *Mai and Lear* (5¢)
 P 792 A study of the control of the yellow-dwarf disease of potatoes *Hansing* (5¢)
 P 841 Log treatment for bark beetle control in connection with the Dutch elm disease *Connola, Collins, and Hagmann* (10¢)
 P 850 Soil fumigation for nematode and disease control *Newhall and Lear* (15¢)
 P 889 Diseases of stored carrots in New York State *Rader* (15¢)
 T 137 Seed treatment for black-leg disease of crucifers *Clayton* (15¢)
 T 175 Virus diseases of black raspberries *Rankin* (10¢)
 T 236 Transmission of Bean Mosaic *Harrison* (10¢)
 T 251 Bordeaux injury to tomatoes and its effect on ripening *Horsfall, Magie, and Suit* (15¢)
 T 264 Distribution and relative importance of various fungi associated with pea root-rot in commercial pea-growing areas in New York *Reinking* (15¢)
 G 638 Crown gall and hairy root of apples in nursery and orchard *Gloyer* (10¢)
 G 656 Mosaic of the Refugee Bean *Harrison* (10¢)
 G 660 Use of graphite to prevent clogging of drills when sowing dusted pea seed *Arnold and Horsfall* (10¢)
 G 665 Wild brambles in relation to spread of virus diseases in cultivated black raspberries *Cooley* (10¢)
 G 667 The root-knot nematode in relation to the potato industry on Long Island *Cunningham* (10¢)
 G 668 Yellow oxide of mercury treatment for seed potatoes on Long Island *Cunningham* (10¢)
 G 674 Wild bramble eradication *Cooley* (10¢)
 G 675 Retarded foliation in black raspberries and its relation to mosaic *Cooley* (10¢)
 G 685 Controlling common scab of the potato on Long Island by the addition of mercury compounds to the fertilizer mixture and the relation of soil reaction to the treatment *Cunningham and Wessels* (10¢)
 G 704 The yellow-red virosis of peach: its identification and control *Palmiter and Hildebrand* (10¢)
 G 709 Currant leaf spot control *Suit* (10¢)
 G 710 Control of spur blight of red raspberries *Suit* (10¢)
 G 711 Control of gooseberry diseases *Suit and Palmiter* (10¢)

For bulletins E, J, P, and S write the College of Agriculture, Ithaca, N. Y.

- G 712 Field results on control of grape diseases *Suit* (10¢)
- G 714 Ground treatments as an aid in apple scab control *Palmiter* (10¢)
- G 734 Sooty blotch disease of pears and its control *Palmiter* (10¢)
- G 747 Orchard tests for apple scab control in New York State *Hamilton and Palmiter* (35¢)
- G 756 Rust diseases of apples and their control in the Hudson Valley *Palmiter* (20¢)
- C 186 Damping-off control *Horsfall* (5¢)

ELECTRICITY (see **Agricultural Engineering**)

ENGINEERING (see **Agricultural Engineering**)

ENTOMOLOGY

- E 206 The control of diseases and insects affecting vegetable crops *Chupp and Leiby* (25¢)
- E 306 Diseases and insects of small fruits *Mills and Dewey* (10¢)
- E 687 Dutch elm disease control *Welch, Rankin, and Readio* (5¢)
- E 712 Nematodes parasitic to the Irish potato *Mai and Cunningham* (5¢)
- E 720 Pollination of fruit trees *Wellington* (5¢)
- E 770 The Japanese beetle *Adams and Matthysee* (10¢)
- E 866 Prevent the spread of golden nematode of potatoes *Lear* (5¢)
- P 738 Biology and control of the wheat wireworm, *Ariotes mancus* Say *Rawlins* (10¢)
- P 841 Log treatment for bark beetle control in connection with the Dutch elm disease *Connola, Collins, and Hagmann* (10¢)
- P 844 The sheep tick: materials and equipment for its control *Schwardt and Matthysee* (10¢)
- P 850 Soil fumigation for nematode and disease control *Newhall and Lear* (15¢)
- P 852 DDT sprays and dusts for the control of cauliflower and cabbage caterpillars on Long Island *Huckett* (10¢)
- T 56 The leaf-weevil *Parrott and Glasgow* (10¢)
- T 66 Rosy aphid in relation to abnormal apple structure *Parrott, Hodgkiss, and Glasgow* (10¢)
- T 121 Aphiscidal properties of tobacco dust *Huckett* (10¢)
- T 229 Anatomy and postpupal development of the female reproductive system in the apple maggot fly *Dean* (10¢)
- T 277 Methods of estimating foliage area injured by grape leafhoppers *Hartzell* (15¢)
- T 283 Evaluation of spray programs for the control of the grape berry moth *Taschenberg* (20¢)
- T 286 DDT residue studies of fresh grapes, juice, and jam *Taschenberg and Avens* (10¢)
- G 635 Biological control of oriental fruit moth *Daniel, Cox, and Crawford* (10¢)
- G 637 Tar distillate emulsions for the control of the black cherry aphid *Hartzell* (10¢)
- G 640 Non-arsenical dusts for cauliflower worm control in western New York *Hervey and Palm* (10¢)
- G 648 Feeding habits of sinuate pear borer in relation to control practices *Glasgow* (10¢)
- G 652 Planting dates as an aid to potato insect control on Long Island *Huckett* (10¢)
- G 669 Oriental fruit moth control in quince plantings *Daniel and Cox* (10¢)
- G 692 Cranberry rootworm as an apple pest *Harman* (10¢)

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

- G 695 Non-arsenical dusts for cauliflower and cabbage worm control on Long Island *Huckett* (10¢)
G 702 Spraying and dusting experiments with bush lima beans on Long Island for control of the Mexican bean beetle *Huckett* (15¢)
G 703 Current contributions on insect control. II. (15¢)
G 713 Timing of rotenone application for control of the pea aphid on Long Island, with special reference to mosaic incidence *Huckett* (10¢)
G 715 Japanese beetle abundance and injury on sweet corn *Carruth, Bartlett, and Adams* (10¢)
G 716 Biology and control of the apple redbug *Dean and Chapman* (15¢)
G 732 Hooded booms for grape spraying *Taschenberg* (15¢)
G 733 The red-banded leaf roller as an apple pest in New York *Harman* (15¢)
G 736 Control of the potato aphid on tomatoes *Taschenberg* (15¢)
G 738 Grape leafhopper control, 1944-47 *Taschenberg and Hartzell* (20¢)
G 755 Red-banded leaf roller and its control *Glass and Chapman* (20¢)
C 126 Flea beetles *Huckett* (5¢)
C 127 Squash borer *Huckett* (5¢)
C 170 The pear midge *Munding* (5¢)

ETIQUETTE

- J 79 As others see you (5¢)

EXTENSION

- E 699 Progress of the New York State Extension Service (10¢)
E 725 This is your Extension Service (5¢)
E 726 Twenty years of Extension broadcasting *Taylor* (5¢)
E 753 Let's prepare a publication *Leonard* (30¢)
E 864 New York farmers' opinions on agricultural programs *Moe* (10¢)

FARM LABOR

- E 656 Suggestions on how to pick up potatoes *Bierly and Hardenburg* (5¢)
E 666 Are you a good boss? *Bradt* (5¢)
P 819 Farm labor camps and city youth *Anderson* (5¢)

FARM MANAGEMENT (see **Agricultural Economics**)**FERTILIZERS** (see **Soils**)**FIREPLACES** (see **Flowers and Plantings**)**FLORICULTURE** (see **Flowers and Plantings**)**FLOWERS AND PLANTINGS**

- E 185 The planting and care of shrubs and trees *Bushey* (5¢)
E 265 Pools for home grounds *Bushey* (5¢)
E 379 Christmas decoration *Smith, Lee, and Fox* (5¢)
E 403 The rock garden *Skinner* (10¢)
E 441 Some plants poisonous to touch *Muenschner* (5¢)
E 467 Lily forcing *Post* (5¢)
E 468 Structures for starting and growing ornamental plants *Post* (5¢)
E 469 The home lawn *Cornman* (10¢)

For bulletins E, J, P, and S write the College of Agriculture, Ithaca, N. Y.

- E 579 Growing garden flowers from seed *Allen* (5¢)
- E 612 Outdoor fireplaces *Bushey* (5¢)
- E 623 The care of plants in the home *Post* (5¢)
- E 635 An efficient labor-saving method of steaming soil *Dimock and Post* (5¢)
- E 693 Driveways and sidewalks *Bushey* (5¢)
- E 698 2,4-D and weed-free lawns *Pridham and Cornman* (5¢)
- E 724 Shade trees for the home lawn *Bushey* (5¢)
- E 729 Control of small animals in homes and gardens *Eadie and Hamilton* (5¢)
- E 748 Selecting a building site for farm, village, or city homes *Bushey* (5¢)
- E 749 Landscape steep slopes *Bushey* (5¢)
- E 778 Foundation plantings about the house *Bushey* (5¢)
- E 813 Border plantings and outdoor living room for rural and urban properties
Bushey (10¢)
- E 853 The commercial storage of cut flowers *Post and Fischer* (5¢)
- *E 893 Peony culture *Lee* (5¢)
- J 68 Lawn games for 4-H club boys and girls *Bushey* (5¢)
- J 70 Indoor gardening *Post* (5¢)
- J 87 A flower garden of annuals *Schaufler* (5¢)
- J 96 Perennials for a 4-H flower border *Schaufler* (5¢)
- P 787 Effects of daylength and temperature on growth and flowering of some florist
crops *Post* (10¢)
- *P 885 Daylength and temperature in relation to growth and flowering of orchids
Rotor (20¢)
- T 177 China aster seed treatment and storage *Gloyer* (10)

FOOD SCIENCE and TECHNOLOGY

Dairy

- E 804 Good cooking with dry milk *Miller and Personius* (10¢)
- T 70 Conditions causing variation in the reaction of freshly-drawn milk *VanSlyke
and Baker* (10¢)
- T 72 Determination of the keeping quality of milk *Baker and VanSlyke* (10¢)
- T 80 Reaction of milk in relation to blood cells and bacterial infections of udder
Baker and Breed (10¢)
- T 117 Effect of lactic-acid producing Streptococci on flavor of cheddar cheese *Hucker
and Marquardt* (10¢)
- T 118 Studies of coccaceae, VI and VIII. *Hucker and Robertson* (10¢)
- T 132 Micrococci in normal udder *A. Breed* (10¢)
- T 134 Cocci resisting pasteurization *Hucker* (10¢)
- T 135 Classification of micrococci *Hucker* (20¢)
- T 136 Motility of certain cocci *Hucker and L. Thatcher* (10¢)
- T 139 Summary of studies of casein *VanSlyke* (10¢)
- T 141 Action of streptococci on casein *Hucker* (10¢)
- T 142 Carbon dioxide production by streptococci *Hucker* (10¢)
- T 143 Biochemical reactions produced by streptococci *Hucker* (15¢)
- T 144 Relations of acid-proteolytic cocci *Hucker* (10¢)
- T 155 Grindrod impact sterilizer *Hucker and A. Hucker* (10¢)
- T 156 Control of bacteria during pasteurization *Yale* (10¢)
- T 157 Creaming of milk *Dahlberg and Marquardt* (20¢)

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

- T 161 Comparison of aging periods for ice cream mixes *Hening* (10¢)
T 165 Bacterial flora of aseptically drawn milk *Dorner* (10¢)
T 184 Rate of chemical change in milk brought about by certain lactic acid streptococci *Kelly* (10¢)
T 191 Thermophilic bacteria in milk pasteurized by the holder process *Breed* (10¢)
T 200 The influence of certain lactic acid streptococci on the chemical changes in cheddar cheese during ripening *Kelly* (10¢)
T 201 Lactic acid streptococci associated with the early stages of cheddar cheese ripening *Kelly* (10¢)
T 211 Heat transfer thru stainless steel and glass-lined steel in dairy pasteurizers *Marquardt, Pheteplace and Dahlberg* (10¢)
T 213 Temperature variations in bacteriological incubators *Pederson, Yale, and Eglinton* (15¢)
T 242 Methods of making cheddar cheese from milk with low curd tension *Marquardt and Hucker* (10¢)
T 248 Bacteriological quality of ice cream supply for a small city *Yale and Hickey* (10¢)
T 249 Methods for determining salt in various cheeses *Marquardt* (10¢)
T 253 Factors affecting the quality of limburger cheese made from milk heated to 145° F. (62.8° C.) *Yale* (10¢)
T 254 Effect of time and temperature of pasteurization upon some of the properties and constituents of milk *Holland and Dahlberg* (15¢)
T 257 Rate of rennet coagulation and curd tension of milk with special reference to problems in cheese manufacture *Marquardt and Needham* (10¢)
T 258 Relative sweetness of sugars as affected by concentration *Dahlberg and Penczek* (10¢)
T 259 Organisms causing rusty spot in cheddar cheese *Pederson and Breed* (5¢)
T 260 Use of the contact plate method to determine the microbial contamination on flat surfaces *Walter and Hucker* (10¢)
T 261 "Quick-time" pasteurization of milk *Dahlberg, Holland, and Miner* (5¢)
T 263 The bacterial population of paper milk containers in relation to methods of moisture proofing *Rice* (15¢)
T 265 Ripening cheese in cans *Dahlberg and Marquardt* (10¢)
T 266 Gas production by cheddar and limburger cheeses ripened in cans *Dorn and Dahlberg* (10¢)
T 268 The surface flora and the use of pure cultures in the manufacture of limburger cheese *Yale* (10¢)
T 269 Effect of pasteurization times and temperatures on certain properties and constituents of cream *Hening and Dahlberg* (10¢)
T 270 Coliform bacteria in cheddar cheese *Yale and Marquardt* (10¢)
T 271 Pasteurizing milk for cheese making by direct steam *Marquardt and Yale* (10¢)
T 275 Studies on the *Coccaceae*, XVIII. The enterotoxin-producing *Micrococci* *Haynes and Hucker* (20¢)
T 276 The action of copper and antioxidants in linoleic acid autoxidation *Smith and Stotz* (10¢)
T 280 The rate of germicidal action of the quaternary ammonium compounds *Hucker, Metcalf, and Cook* (15¢)
T 281 Effect of H-ion concentration and temperature on the activity of quaternary ammonium compounds *Hucker, Stone, and Watkins* (15¢)

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- T 282 The effect of organic matter on the germicidal action of the quaternary ammonium compounds *Hucker and Van Eseltine* (10¢)
- T 284 Flavor evaluation procedures *Hening* (10¢)
- G 534 Effect of pasteurization and cooling of milk on quality of cheddar cheese *Marquardt and Hucker* (10¢)
- G 585 Straining milk on the farm *Dahlberg* (10¢)
- G 639 Temperature of milk immediately after milking and strainer capacity *Dahlberg and Durham* (10¢)
- G 645 Proved sires and partially proved dams in breeding dairy cattle for production *Dahlberg* (10¢)
- G 662 Studies in the manufacture of Trappist type cheese *Marquardt* (10¢)
- G 670 Salting and cooking of curds in the manufacture of several varieties of cheeses *Marquardt* (10¢)
- G 673 Comparative fairness of single can and weigh vat samples of milk for bacterial counts as a basis of premium payments to Grade A dairymen *Yale and Breed* (10¢)
- G 696 Dextrose and corn sirup for frozen desserts *Dahlberg and Penczek* (10¢)
- C 93 Clean and cold milk *Breed* (5¢)
- C 147 Chronic mastitis *Hucker and Hansen* (5¢)
- C 155 Straining milk on the farm *Dahlberg* (5¢)
- C 197 Whipping light cream *Dahlberg* (5¢)

Fruits (*Food Science and Technology*)

- E 708 Fruit ices — make them at home *Hening* (5¢)
- T 179 Factors affecting the pectin content of stored apples pomace *Kertesz and Green* (10¢)
- T 233 The chemical determination of the quality of canned green peas *Kertesz* (10¢)
- T 234 A chemical method for determining the safeness to foliage of commercial calcium arsenates *Pearce, Norton, and Chapman* (10¢)
- T 274 The chemical composition of maturing New York State grapes *Kertesz* (5¢)
- T 285 Chemical composition of ripe Concord-type grapes grown in New York in 1947 *Robinson, Avens, and Kertesz* (10¢)
- G 726 Chemical composition and freezing adaptability of strawberries *Robinson, Lee, Slate, and Pederson* (10¢)
- G 727 Concentration of fruit juices by freezing *Pederson and Beattie* (10¢)
- G 728 Deterioration of processed fruit juices *Pederson, Beattie, and Stotz* (15¢)
- G 743 Low temperature preservation of fruit juices and fruit juice concentrates *Lee, Robinson, Hening, and Pederson* (10¢)
- C 148 Making cider vinegar on the farm *Pederson and Beattie* (5¢)
- C 166 Making grape juice in the home *Pederson* (5¢)
- C 181 Flash pasteurization of apple juice *Pederson and Tressler* (5¢)
- C 184 Making maraschino cherries at home *Lee* (5¢)
- C 194 Home preparation and preservation of fruit and vegetable juices *Tressler and Pederson* (5¢)

Infant Foods (*Food Science and Technology*)

- G 584 Commercially prepared infant foods *Hucker and A. Hucker* (5¢)

Maple Sirup (*Food Science and Technology*)

- E 397 Maple sirup and sugar *Cope* (5¢)

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

- G 718 Some factors causing dark-colored maple sirup *Haywood and Pederson* (10¢)
 G 719 The storage of maple sirup *Hayward* (10¢)
 G 720 Factors in the preparation of maple cream *Hayward* (5¢)
 G 742 Changes in the composition of maple sap during the tapping season *Holgate* (10¢)

Vegetables (*Food Science and Technology*)

- T 150 Organisms in spoiled tomato products *Pederson* (15¢)
 T 151 Fermentation of glucose, fructose, and arabinose by organisms from spoiled tomato products *Pederson* (10¢)
 T 167 The genus *Leuconostoc* *Hucker and Pederson* (20¢)
 T 168 Floral changes in the fermentation of normal and inoculated sauerkraut *Pederson* (15¢)
 T 169 Effect of pure culture inoculation on the quality and chemical composition of sauerkraut *Pederson* (10¢)
 T 176 Factors affecting quality in peas *Sayre, Willaman, and Kertesz* (15¢)
 T 252 Use of calcium in the commercial canning of whole tomatoes *Kertesz, Tolman, Loconti, and Royle* (10¢)
 T 256 Objective methods for determining the maturity of peas, with special reference to the frozen product *Lee* (10¢)
 T 272 Factors determining the consistency of commercial canned tomato juice *Kertesz and Loconti* (10¢)
 T 273 The bactericidal action of cabbage and other vegetable juices *Pederson and Fisher* (10¢)
 T 278 Factors affecting the acid and total solids content of tomatoes *Lee and Sayre* (15¢)
 T 287 Flat sour spoilage of tomato juice *Pederson and Becker* (10¢)
 T 288 The effect of salt upon the bacteriological and chemical changes in fermenting cucumbers *Pederson and Ward* (10¢)
 G 538 Preservative action in catsup of salt, sugar, benzoate, and acid *Pederson and Breed* (10¢)
 G 570 Spoilage in tomato products *Pederson* (5¢)
 G 613 Quality of commercial sauerkraut *Pederson and Kelly* (5¢)
 G 614 Relation between temperature and rate of fermentation of commercial sauerkraut *Pederson* (10¢)
 G 693 The relation between quality and chemical composition of canned sauerkraut *Pederson* (10¢)
 G 725 Relation of copper-containing fungicides to the ascorbic acid and copper content of tomato juice *Robinson, Schroeder, Stotz, and Kertesz* (10¢)
 G 729 Determination of maturity of frozen lima beans *Lee* (10¢)
 G 744 Effect of temperature upon bacteriological and chemical changes in fermenting cucumbers *Pederson and Albury* (10¢)
 G 745 The pectic substances of mature John Baer tomatoes *Kertesz and McColloch* (10¢)
 G 754 Effect of blanching and subsequent holding on some chemical constituents and enzyme activities in peas, snap beans, and lima beans *Moyer and others* (15¢)
 *G 758 Variety comparison of peas used for canning and freezing, 1952 *Sayre, Tapley, and Barton* (15¢)
 *G 759 The yield and quality of juice obtained from New York State tomatoes graded

For bulletins E, J, P, and S write the College of Agriculture, Ithaca, N. Y.

according to United States Department of Agriculture Standards *Hand et al*
(30¢)

C 196 The vitamin C content of New York State vegetables *Tressler*

FORESTRY (see Conservation)

4-H CLUB

- E 772 4-H Clubs in New York State *Hoefler* (10¢)
- J 39 Log scaling and timber estimating *Pond and Winch* (10¢)
- J 43 Woodlot improvement — managing the woodlot *Cope and Winch* (10¢)
- J 55 Program of songs, games, and folk dances for 4-H clubs *Duthie* (5¢)
- J 63 4-H clubs leadership *Entorf* (5¢)
- J 68 Lawn games for 4-H club boys and girls *Bushey* (5¢)
- J 70 Indoor gardening *Post* (5¢)
- J 74 A 4-H pigeon loft *Botsford* (5¢)
- J 75 Chicks and their care *Ogle* (5¢)
- J 77 Conserve our soil, forest, and wildlife *Fales, Wilson, Winch, and Palmer* (20¢)
- J 78 Broiler growing *Ogle* (5¢)
- J 79 As others see you (5¢)
- J 80 Grow good potatoes *Pratt* (10¢)
- J 82 Management of a pullet laying flock *Ogle* (5¢)
- J 84 Guiding the 4-H Club *Heinzelman* (5¢)
- J 85 Know your trees *Cope and Winch* (15¢)
- J 86 How to demonstrate (5¢)
- J 87 A flower garden of annuals *Schaufler* (5¢)
- J 88 Rope work (10¢)
- J 89 4-H dairy handbook *H. A. Willman* (10¢)
- J 90 Future forests *Winch* (5¢)
- J 91 Some facts about baking *Dunn and Vollmer* (5¢)
- J 92 Muffins and quick loaf breads *Dunn and Vollmer* (5¢)
- J 93 Cakes, pies, yeast rolls, and bread *Dunn and Vollmer* (5¢)
- J 95 The ABC's of cooking *Dunn* (10¢)
- J 96 Perennials for a 4-H flower border *Schaufler* (5¢)
- J 97 Pheasant management *Holm and Clark* (5¢)
- *J 99 Poultry demonstrations *Ogle* (10¢)
- *J 100 Refreshments for teas *Massett* (5¢)
- *J 103 Inviting bird neighbors *Sherwood and Gordon* (10¢)

Home Economics (see page 34)

4-H MECHANICS LEAFLETS

- 1 Cornell 4-H pyramid hover *Edwards* (5¢)
- 2 Cornell 4-H chick feeder *Edwards* (5¢)
- 3 Cornell 4-H intermediate poultry feeder *Edwards* (5¢)
- 4 Cornell 4-H poultry feeder *Edwards* (5¢)
- 5 Cornell 4-H water-fountain stands *Edwards* (5¢)
- 7 Cleaning and sharpening the garden hoe *Edwards* (5¢)
- 8 Cornell 4-H small mitre box *Edwards* (5¢)
- 10 Cornell 4-H shoe-cleaning box *Edwards* (5¢)
- 11 Cornell 4-H knife rack *Edwards* (5¢)

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

- 12 Cornell 4-H member's signboard *Edwards* (5¢)
- 14 A roadside sign *Edwards* (5¢)
- 15 Kitchen cutting board *Edwards* (5¢)
- 16 A nest shelter for robins *Edwards* (5¢)
- 17 Window ventilator *Edwards* (5¢)
- 18 4-H book ends *Edwards* (5¢)
- 19 Shoe cleaner *Edwards* (5¢)
- 20 A window box (floor type) *Edwards* (5¢)
- 21 Plastic napkin rings *Edwards* (5¢)
- 23 Window box (window sill model) *Edwards* (5¢)
- 24 Plastic towel rack *Edwards* (5¢)
- 25 Plastic novelty box *Edwards* (5¢)
- 26 A napkin holder *Edwards* (5¢)
- 27 Cornell 4-H glass and toothbrush holder *Edwards* (5¢)
- 28 Whiskbroom holder *Edwards* (5¢)
- 29 Identification and use of tools *Edwards* (5¢)

FRUITS

Culture, Care, and Production

- E 306 Diseases and insects of small fruits *Mills and Dewey* (10¢)
- E 384 The planting and early care of the apple orchard *Hoffman* (5¢)
- E 405 Fire blight and its control *Hildebrand* (5¢)
- E 421 Growing fruit for home use *Oskamp* (5¢)
- E 440 The storage of apples *Smock* (5¢)
- E 453 The air-cooled, or common, apple storage and its management *Goodman* (10¢)
- E 618 Drying fruits and vegetables at home *Prudent and Wright* (5¢)
- E 701 Nut growing *MacDaniels* (5¢)
- E 719 Raspberry growing *Slate, Braun, and Mundinger* (10¢)
- E 720 Pollination of fruit trees *Wellington* (5¢)
- E 733 Varieties of fruit for New York (5¢)
- E 750 Harvesting, handling, and packaging apples *Southwick and Hurd* (20¢)
- E 759 Controlled-atmosphere storage of apples *Smock* (10¢)
- E 786 Farm refrigerated apple storages *Gray* (15¢)
- E 787 Cherry growing in New York *Edgerton* (10¢)
- E 789 Cultural practices in the bearing apple orchard *Boynton and Hoffman* (10¢)
- E 805 Cultural practices for New York vineyards *Shaulis* (15¢)
- E 812 1952 spray schedules for tree fruits *Mills and LaPlante* (5¢)
- E 816 Chemical weed control in the vineyard *Shaulis and Dugan* (5¢)
- E 846 Home storage of vegetables and fruits (5¢)
- E 869 Peach growing *Edgerton* (10¢)
- *E 882 Top-working and bridge-grafting fruit trees *Fisher* (5¢)
- P 799 The influence of stored apples on the ripening of other apples stored with them *Smock* (5¢)
- P 813 Studies on storage scald of apples *Smock and Southwick* (5¢)
- P 843 Air purification in the apple storage *Smock and Southwick* (10¢)
- T 126 Annual variation in apple yields *Collison and Harlan* (10¢)
- T 159 Cross-unfruitfulness in the apple *O. Einset* (10¢)
- T 164 Variability and size relations in apple trees *Collison and Harlan* (10¢)

For bulletins E, J, P, and S write the College of Agriculture, Ithaca, N. Y.

- T 237 Lysimeter investigations: IV. Water movement, soil temperatures, and root activity under apple trees *Collison* (10¢)
- T 250 A genetic study of variations in floral morphology and function in cultivated forms of *Vitis* *Oberle* (15¢)
- G 617 Experiments in cherry pollination *O. Einset* (10¢)
- G 646 Fertilizer responses of Baldwin apple trees on an acid soil *Collison and Harlan* (10¢)
- G 647 Winter injury of Baldwin apple trees in relation to previous tree performance and nutritional treatment *Collison and Harlan* (10¢)
- G 653 Behavior of cherry trees in Hudson River Valley with reference to losses from winter killing and other causes *Anderson* (10¢)
- G 701 Orchard covers and their relation to soil conservation *Collison and Carleton* (10¢)
- C 117 Identification of Mazzard and Mahaleb cherry rootstocks *Tukey* (5¢)
- C 134 The plum in New York *Van Alstyne* (5¢)
- C 144 Fruits for roadside markets *Howe* (5¢)
- C 192 Filberts *Slate* (5¢)

Diseases (Fruit)

- E 306 Diseases and insects of small fruits *Mills and Dewey* (10¢)
- E 405 Fire blight and its control *Hildebrand* (5¢)
- E 812 1952 spray schedules for tree fruits *Mills and LaPlante* (5¢)
- P 886 Cost and effectiveness of insect and disease control practices in New York apple orchards *Oppenfeld, Boynton, and others* (35¢)
- T 175 Virus diseases of black raspberries *Rankin* (10¢)
- G 638 Grown gall and hairy root of apples in nursery and orchard *Gloyer* (10¢)
- G 665 Wild brambles in relation to spread of virus diseases in cultivated black raspberries *Cooley* (10¢)
- G 674 Wild bramble eradication *Cooley* (10¢)
- G 675 Retarded foliation in black raspberries and its relation to mosaic *Cooley* (10¢)
- G 704 The yellow-red virosis of peach: Its identification and control *Palmiter and Hildebrand* (10¢)
- G 709 Currant leaf spot control *Suit* (10¢)
- G 710 Control of spur blight of red raspberries *Suit* (10¢)
- G 711 Control of gooseberry diseases *Suit and Palmiter* (10¢)
- G 712 Field results on control of grape diseases *Suit* (10¢)
- G 714 Ground treatments as an aid in apple scab control *Palmiter* (10¢)
- G 734 Sooty blotch disease of pears and its control *Palmiter* (10¢)
- G 747 Orchard tests for apple scab control in New York State *Hamilton and Palmiter* (35¢)
- G 756 Rust diseases of apples and their control in the Hudson Valley *Palmiter* (20¢)

Foods (see Food Science and Technology)

Insects (Fruit)

- E 306 Diseases and insects of small fruits *Mills and Dewey* (10¢)
- E 812 1952 spray schedules for tree fruits *Mills and LaPlante* (5¢)
- *P 886 Cost and effectiveness of insect and disease control practices in New York apple orchards *Oppenfeld, Boynton, and others* (35¢)
- T 56 The leaf-weevil *Parrot and Glasgow* (10¢)

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

- T 66 Rosy aphid in relation to abnormal apple structure *Parrot, Hodgkiss, and Hartzell* (10¢)
- T 121 Aphiscidal properties of tobacco dust *Huckett* (10¢)
- T 229 Anatomy and postpupal development of the female reproductive system in the apple maggot fly *Dean* (10¢)
- T 277 Methods of estimating foliage area injured by grape leaf-hoppers *Hartzell* (15¢)
- T 283 Evaluation of spray programs for the control of the grape berry moth *Taschenberg* (20¢)
- T 286 DDT residue studies of fresh grapes, juice, and jam *Taschenberg and Avens* (10¢)
- G 635 Biological control of oriental fruit moth *Daniel, Cox, and Crawford* (10¢)
- G 637 Tar distillate emulsions for the control of the black cherry aphid *Hartzell* (10¢)
- G 648 Feeding habits of sinuate pear borer in relation to control practices *Glasgow* (10¢)
- G 669 Oriental fruit moth control in quince plantings *Daniel and Cox* (10¢)
- G 692 Cranberry rootworm as an apple pest *Harman* (10¢)
- G 703 Current contributions on insect control. II. (15¢)
- G 716 Biology and control of the apple redbug *Dean and Chapman* (15¢)
- G 732 Hooded booms for grape spraying *Taschenberg* (15¢)
- G 733 The red-banded leaf roller as an apple pest in New York *Harman* (15¢)
- G 738 Grape leafhopper control, 1944-47 *Taschenberg and Hartzell* (20¢)
- G 755 Red-banded leaf roller and its control *Glass and Chapman* (20¢)
- C 170 The pear midge *Mundinger* (5¢)

Marketing (Fruit)

- E 750 Harvesting, handling, and packaging apples *Southwick and Hurd* (20¢)
- P 721 An economic study of fruit and vegetable wholesaling and jobbing firms in New York City *Gearreald* (10¢)
- P 794 Retail and wholesale distribution of apples in up-state New York *Cravens* (5¢)
- P 815 Fruit and vegetable stores as retail outlets for fruit *Rasmussen, Quitsland, and Cake* (10¢)
- P 820 Hucksters and pushcart operators as retailers of fruit *Rasmussen, Quitsland, and Cake* (10¢)
- P 826 Apple quality and its effect on price and rate of sale *Blanch* (10¢)
- P 851 Consumer purchases of fresh fruits at retail—prewar, wartime, and postwar *Rasmussen* (10¢)
- P 870 Consumer packaging as a method of retailing fruits and vegetables produced in the Northeast. Part I. Consumer acceptance and retailing losses *Godwin* (10¢)
- P 881 Financial analysis of fruit and vegetable processing plants *Watson* (5¢)

Prices (Fruit)

- P 773 Changes in the prices of apples and other fruits *Woodin* (5¢)
- P 826 Apple quality and its effect on price and rate of sale *Blanch* (10¢)

Soils (Fruit)

- P 541 Soils in relation to fruit growing in New York. Part I. A detailed soil survey of Hilton area, Monroe County *Sweet and Oskamp* (15¢)

For bulletins E, J, P, and S write the College of Agriculture, Ithaca, N. Y.

- P 550 Soils in relation to fruit growing in New York. Part II. Size, production, and rooting habit of apple trees on different soil types in the Hilton and Morton areas, Monroe County *Oskamp and Batjer* (5¢)
- P 633 Soils in relation to fruit growing in New York. Part VIII. Tree behavior on important soil profiles in the Medina-Lyndonville-Carlton area, Orleans County *Oskamp* (5¢)
- P 637 Soils of Orleans County, New York, in their relation to orchard planting *Sweet* (40¢)
- P 653 Soils in relation to fruit growing in New York. Part IX. Tree behavior on important soil profiles in the Newfane-Olcott area, Niagara County *Oskamp* (5¢)
- P 705 Soils in relation to fruit growing in New York. Part XII. Tree behavior on important soil profiles in the Peru, Plattsburg, and Crown Point areas in Clinton and Essex Counties *Oskamp* (5¢)
- P 706 Soils in relation to fruit growing in New York. Part XIII. Seasonal fluctuations of soil moisture in some important New York orchard soil types. *Boynton and Savage* (5¢)
- P 711 Soils in relation to fruit growing in New York. Part XIV. Tree behavior on important soil profiles in the Finger Lakes area *Boynton* (5¢)
- P 763 Soils in relation to fruit growing in New York. Part XV. Seasonal and soil influences on oxygen and carbon-dioxide levels of New York orchard soils *Boynton* (10¢)

GARDENS and GARDENING (see **Flowers and Plantings, and Vegetables**)

GOVERNMENT (see **Taxes and Government**)

GRAIN (see **Crops**)

GRAPES (see **Fruits**)

HOUSING (see **Home Economics**)

HORTICULTURE (see **Flowers and Plantings, Fruits and Vegetable Crops**)

INSECTS (see **Entomology**)

INSURANCE (see **Agriculture Economics**)

JOURNALISM

E 753 Let's prepare a publication *Leonard* (30¢)

LAND CLASSIFICATION (see **Farm Management**)

LAND UTILIZATION (see **Farm Management**)

LANDSCAPING (see **Flowers and Plantings**)

LAWNS (see **Flowers and Plantings**)

LIGHT and POWER (see **Agricultural Engineering**)

LIME (see **Soils**)

LIVESTOCK (see **Animal Husbandry**)

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

MACHINERY and TOOLS (see **Agricultural Engineering**)

MAPLE SIRUP (see **Food Science and Technology**)

MARKETING (see **Agricultural Economics**)

MEATS — BUTCHERING

E 732 Meat for the family — selecting, slaughtering, cutting, freezing, and curing
Wanderstock and Miller (25¢) **No free distribution**

P 816 Consumer demand for meat, Syracuse, New York, 1942 *Anderson* (5¢)

MILK (see **Dairying, Farm Management, Food Science and Technology**)

MUSHROOMS

E 386 Some common edible and poisonous mushrooms *Fitzpatrick and Ray* (5¢)

G 448 Velvet-stemmed Collybia *Stewart* (10¢)

G 535 Mica ink-cap or glistening Coprinus *Stewart* (10¢)

G 666 The uncertain Hypholoma *Stewart* (10¢)

NUTS

E 701 Nut growing *MacDaniels* (5¢)

C 192 Filberts *Slate* (5¢)

OATS (see **Crops**)

ONIONS (see **Crops, Soils, and Vegetables**)

ORCHARDS (see **Fruits**)

PEARS (see **Fruit**)

PEAS (see **Vegetables**)

PLANT DISEASES (see **Diseases**)

PLUMS (see **Fruit**)

POISONOUS PLANTS (see **Weeds**)

PONDS

E 771 Farm ponds *Pistilli* (5¢)

POPCORN

G 672 Relation of age and viability to popping of popcorn *Stewart* (5¢)

POPULATION (see **Country Life**)

POTATOES (see **Vegetables**)

POULTRY

E 143 Producing capons for home or market *Botsford* (10¢)

E 153 Rearing chickens *Hurd* (10¢)

E 337A Pullorum disease *Levine* (5¢)

E 337C Fowl pox *Levine* (5¢)

E 416 Handling eggs for market *Botsford* (5¢)

For bulletins E, J, P, and S write the College of Agriculture, Ithaca, N. Y.

- E 451 Homes for laying hens *Goodman* (10¢)
- E 558 Methods of feeding laying hens *Botsford, Heuser, and Weaver* (5¢)
- E 679 Getting started in poultry farming *Darrah and Bruckner* (5¢)
- E 713 Make your poultry farm pay *Darrah* (5¢)
- E 717 Turkey growing *Smith* (10¢)
- E 734 Electric heating cable for a poultry waterer *Turner* (5¢)
- E 740 The avian leukosis complex *Levine* (5¢)
- E 752 Equipment to save labor on the poultry farm *Hoff and Hurd* (5¢)
- E 785 How to prepare and cook chicken *Shaben and Hurd* (10¢)
- E 806 Blackhead (Histomoniasis) can be controlled *Moore* (5¢)
- E 810 Home canning of meat and poultry *Wood* (5¢)
- E 851 Brooding chickens in colony brooder houses *Hurd* (5¢)
- E 862 Barbecued chicken *Baker and Hayes* (5¢)
- E 863 Clean eggs bring more money *Earle and Botsford* (5¢)
- E 865 Permanent brooder houses *Hoff and Hurd* (10¢)
- E 868 More efficiency on the poultry farm *Earle* (5¢)
- *E 884 Growing turkeys for market *E. Y. Smith* (10¢)
- *E 887 Culling for egg production *Hall and Marble* (15¢)
- *E 889 Broiler growing in New York State *Baker* (10¢)
- J 74 A 4-H pigeon loft *Botsford* (5¢)
- J 75 Chicks and their care *Ogle* (5¢)
- J 78 Broiler growing *Ogle* (5¢)
- J 82 Management of a pullet laying flock *Ogle* (5¢)
- *J 99 Poultry demonstrations *Ogle* (10¢)
- P 858 Marketing practices and egg quality, 1948-49 *Earle, Darrah, and others* (10¢)
- P 859 Costs of raising pullets on New York farms, 1947 *Pickler* (5¢)
- P 863 Marketing of dressed chickens by New York poultrymen, 1946-47 *Searles* (10¢)
- P 864 Commercial poultry-farm management in New York State, 1946-47 *Kearl* (5¢)
- P 865 Seasonal costs and returns in producing eggs, New York, 1946-47 *Kearl* (5¢)
- P 868 Business operations of northeastern wholesale egg buyers *Earle* (5¢)
- P 883 Operations of poultry slaughterhouses in New York City, 1949-50 *Ashe* (20¢)
- P 884 An appraisal of the New York City live poultry market reports *Laurent* (25¢)
- *P 894 Marketing eggs in retail food stores *Kantner* (15¢)
- *P 896 Hatching or market eggs? *Carpenter* (10¢)
- *P 897 Estimated costs of producing eggs, New York State, 1926-1952 *Carpenter* (15¢)
- Egg buying guide *Krueger* (10¢) No free distribution

POWER (see Light and Power)

PRICES (see Agricultural Economics)

RABBITS

- E 284 The care of rabbits *Hamilton* (5¢)

RASPBERRIES (see Fruits)

RATS

- E 353 Rats and their control *Hamilton* (5¢)

RURAL SCHOOLS (see Country Life)

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

RURAL SOCIOLOGY (see **Country Life**)**SEED**

- G 757 Quality of seeds on sale in New York as revealed by tests completed in 1952
Clark and Little (25¢)

SHEEP (see **Animal Husbandry**)**SHRUBS** (see **Flowers and Plantings**)**SOILS**

- E 406 Land use in New York *Hart* (5¢)
E 438 The control of soil erosion in New York *Gustafson* (10¢)
E 674 Onion production on muck soils *Raleigh* (5¢)
E 744 The control of soil erosion on Long Island *Gustafson, Lamb, and Wilson* (15¢)
E 762 Maintain the diversion terrace *Kerr and Wilson* (5¢)
E 822 More lime on your land (5¢)
P 538 Soil and field-crop management for Cayuga County, New York *Gustafson and Johnstone-Wallace* (5¢)
P 541 Soils in relation to fruit growing in New York. Part I. A detailed soil survey of the Hilton area, Monroe County *Sweet and Oskamp* (15¢)
P 550 Soils in relation to fruit growing in New York. Part II. Size production, and rooting habit of apple trees on different soil types in the Hilton and Morton areas, Monroe County *Oskamp and Batjer* (5¢)
P 637 Soils of Orleans County, New York, in their relation to orchard planting *Sweet* (40¢)
P 703 Soil and field-crop management for southwestern New York *Gustafson* (5¢)
P 705 Soils in relation to fruit growing in New York. Part XII. Tree behavior on important soil profiles in the Peru, Plattsburg, and Crown Point areas in Clinton and Essex Counties *Oskamp* (5¢)
P 706 Soils in relation to fruit growing in New York. Part XIII. Seasonal fluctuations of soil moisture in some important New York orchard soil types *Boynton and Savage* (5¢)
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P 746 Soil and field-crop management for southeastern New York *Gustafson* (5¢)
P 763 Soils in relation to fruit growing in New York. Part XV. Seasonal and soil influences on oxygen and carbon-dioxide levels of New York orchard soils *Boynton* (10¢)
P 777 Soil and field-crop management for northwestern New York *Gustafson* (5¢)
P 789 Soil and field-crop management for the Catskill-Mohawk area of New York *Gustafson* (5¢)
P 795 Cultivation studies of certain vegetables grown on peat soils *Sweet* (10¢)
P 811 Experiments in the control of soil erosion in southern New York *Lamb, Andrews, and Gustafson* (5¢)
P 875 New flash-flame soil pasteurizer *Newhall and Schroeder* (10¢)
T 61 Lysimeter and out-of-door pot culture work at the Station *Barker* (10¢)
T 115 Punctiform-colony-forming bacteria in soils *Conn* (10¢)

For bulletins E, J, P, and S write the College of Agriculture, Ithaca, N. Y.

- T 166 Lysimeter investigations: I. Nitrogen and water relations of crops in legume and non-legume rotations *Collison and Mensching* (20¢)
- T 172 Influence of various non-nitrogenous compounds on the growth of certain bacteria in soils of low productivity *Conn and Darrow* (15¢)
- T 193 Lysimeter investigations. II. Composition of rainwater at Geneva, N. Y., for a 10-year period *Collison and Mensching* (10¢)
- T 212 Lysimeter investigations. III. Mineral and water relations and nitrogen balance in legume and non-legume rotations for 16-year period *Collison, Beattie, Harlan* (20¢)
- T 279 Physical land condition of the fruit breeding farm at Geneva, N. Y. *Secor, Carleton, and Lamb* (20¢)

SOYBEANS (see Crops)

SPINACH (see Vegetables)

SPRING GRAINS (see Crops)

SQUASH (see Vegetables)

STRAWBERRIES (see Fruits)

TAXES AND GOVERNMENT (see Agricultural Economics)

TOBACCO

- G 562 High nicotine tobacco *Collison, Harlan, and Streeter* (10¢)

TOMATOES (see Vegetables)

TOOLS (see Agricultural Engineering)

TREES (see Conservation and Flowers and Plantings)

TURKEYS (see Poultry)

VEGETABLE CROPS

Culture, Care, and Production

- E 448 Starting vegetable plants *Raleigh* (10¢)
- E 615 Farm potato storages and their management *Goodman* (5¢)
- E 618 Drying fruits and vegetables at home *Prudent and Wright* (5¢)
- E 643 Handling seed potatoes *Ora Smith* (5¢)
- E 656 Suggestions on how to pick up potatoes *Bierly and Hardenburg* (5¢)
- E 667 Potato growing in New York *Hardenburg* (5¢)
- E 668 Soybeans (10¢)
- E 669 Dry-bean production in New York *Hardenburg* (5¢)
- E 674 Onion production on muck soils *Raleigh* (5¢)
- E 694 Spinach for market and processing *Raymond* (5¢)
- E 696 The vegetable garden *Pratt, Chupp, and Leiby* (10¢)
- E 721 Sulfuric-acid sprays to control weeds in onions *Newhall, Lawrence, and Justice* (5¢)

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

- E 729 Control of small animals in homes and gardens *Eadie and Hamilton* (5¢)
 E 757 Grading potatoes *Hardenburg and Pratt* (5¢)
 E 769 Chemical weeding of vegetables *Carew* (5¢)
 E 776 Growing pumpkins and squashes *Hardenburg, Chupp, and Leiby* (5¢)
 E 782 Newer varieties of vegetables for 1950 *Work* (5¢)
 E 841 Culinary herbs *Muenschner, Rice, and Brown* (5¢)
 E 846 Home storage of fruits and vegetables (5¢)
 P 553 Studies of potato storage *Smith* (10¢)
 P 682 Vegetable-crop production in Orleans County, New York *Barnes* (5¢)
 P 795 Cultivation studies of certain vegetables grown on peat soils *Sweet* (10¢)
 P 822 Spacing affects yield of asparagus *Thompson* (5¢)
 P 862 Potato irrigation: costs and practices in Suffolk County, New York, 1946
Hampton, Murphy, and Hoff (20¢)
 P 876 Yield, tuber set, and quality of potatoes: Effect of irrigation, date of planting,
 and straw mulch on several varieties in upstate New York, 1948-1951 *Pratt,
 Lamb, and Wright* (5¢)
 T 145 Two new red kidney beans *Gloyer* (15¢)
 G 580 Geneva, a greenhouse cucumber without seeds. *Hawthorn and Wellington*
 (5¢)
 G 633 Relative vigor and productivity of potato plants from basal and apical sets
Stewart (10¢)
 G 655 A potato seed plat roguing experiment *Stewart* (5¢)
 G 658 The relative vigor and productivity of potato plants from basal and apical sets
 cut from tubers in different stages of sprouting *Stewart* (10¢)
 G 700 The relation of spacing to yield and to plant and ear development of some
 yellow sweet corn hybrids in New York *Enzie* (10¢)
 G 705 A descriptive and historical study of some yellow sweet corn hybrids *Enzie*
 (15¢)
 G 706 Starter solutions for tomato plants for 1943 *Sayre* (10¢)
 G 741 Chemical weed control in peas, sweet corn, and beets grown for processing
Dearborn (30¢)
 G 749 Effect of different sources of fertilizer nutrients and different rates of fertilizer
 applications on yields of vegetable canning crops - beets, cabbage, peas, sweet
 corn, tomatoes *Sayre and Vittum* (15¢)
 G 750 Relation of Marion market cabbage yield and bursting to rates of application
 and sources of fertilizer nutrients and insect control *Vittum and Hervey*
 (10¢)
 *G 758 Variety comparisons of peas used for canning and freezing, 1952 *Sayre,
 Tapley, and Barton* (15¢)
- Diseases (Vegetable)**
- E 206 The control of diseases and insects affecting vegetable crops *Chupp and
 Leiby* (25¢)
 E 866 Prevent the spread of golden nematode of potatoes *Lea* (5¢)
 P 742 The yellows disease of lettuce and endive *Linn* (5¢)
 P 792 A study of the control of the yellow-dwarf disease of potatoes *Hansing* (5¢)
 P 889 Diseases of stored carrots in New York State *Rader* (15¢)
 T 137 Seed treatment for black-leg disease of crucifers *Clayton* (15¢)

For bulletins E, J, P, and S write the College of Agriculture, Ithaca, N. Y.

- T 236 Transmission of bean mosaic *Harrison* (10¢)
- T 251 Bordeaux injury to tomatoes and its effect on ripening *Horsfall, Magie, and Suit* (15¢)
- T 264 Distribution and relative importance of various fungi associated with pea root-rot in commercial pea-growing areas in New York *Reinking* (15¢)
- G 656 Mosaic of the Refugee bean *Harrison* (10¢)
- G 660 Use of graphite to prevent clogging of drills when sowing dusted pea seed *Arnold and Horsfall* (10¢)
- G 667 The root-knot nematode in relation to the potato industry on Long Island *Cunningham* (10¢)
- G 668 Yellow oxide of mercury treatment for seed potatoes on Long Island *Cunningham* (10¢)
- G 685 Controlling common scab of the potato on Long Island by the addition of mercury compounds to the fertilizer mixture and the relation of soil reaction to the treatment *Cunningham and Wessels* (10¢)
- G 752 Seed treatment for control of seed-corn maggot and seed decay organisms *Howe, Schroeder, and Swenson* (15¢)
- C 186 Damping-off control *Horsfall* (5¢)

Foods (see Food Science and Technology, and Home Economics)

Insects (Vegetable)

- E 206 The control of diseases and insects affecting vegetables crops *Chupp and Leiby* (25¢)
- E 712 Nematodes parasitic on the Irish potato *Mai and Cunningham* (5¢)
- E 866 Prevent the spread of golden nematode of potatoes *Lear* (5¢)
- P 738 Biology and control of the wheat wireworm, *Agriotes mancus* Say *Rawlins* (10¢)
- P 850 Soil fumigation for nematode and disease control *Newhall and Lear* (15¢)
- P 852 DDT sprays and dusts for the control of cauliflower and cabbage caterpillars on Long Island *Huckett* (10¢)
- G 640 Non-arsenical dusts for cauliflower worm control in western New York *Hervey and Palm* (10¢)
- G 652 Planting dates as an aid to potato insect control on Long Island *Huckett* (10¢)
- G 695 Non-arsenical dusts for cauliflower and cabbage worm control on Long Island *Huckett* (15¢)
- G 702 Spraying and dusting experiments with bush lima beans on Long Island for control of the Mexican bean beetle *Huckett* (15¢)
- G 713 Timing of rotenone application for control of the pea aphid on Long Island, with special reference to mosaic incidence *Huckett* (10¢)
- G 715 Japanese beetle abundance and injury on sweet corn *Carruth, Bartlett, and Adams* (10¢)
- G 736 Control of the potato aphid on tomatoes *Taschenberg* (15¢)
- G 752 Seed treatment for control of seed-corn maggot and seed decay organisms *Howe, Schroeder, and Swenson* (15¢)
- G 753 Low gallonage spraying of vegetable crops *Hervey and Gunkel* (30¢)
- C 126 Flea beetles *Huckett* (5¢)
- C 127 Squash borer *Huckett* (5¢)

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

Marketing (Vegetable)

- P 700 An economic study of the marketing of western New York potatoes by motor truck *Findlen* (5¢)
- P 716 Relation of market quality to the price received for Long Island cauliflower *Hartman* (5¢)
- P 721 An economic study of fruit and vegetable wholesaling and jobbing firms in New York City *Gearreald* (10¢)
- P 764 Consumer buying of potatoes and store offerings *Hotchkiss* (5¢)
- P 779 Problems of packaging vegetables for upstate New York markets *Platenius* (5¢)
- P 814 Retailing potatoes and other vegetables Buffalo, New York, 1940 *Lee* (10¢)
- P 815 Fruit and vegetable stores as retail outlets for fruit *Rasmussen, Quitsland, and Cake* (10¢)
- P 837 Muckland and upland potatoes: grade quality and wholesale price at Buffalo and Rochester *Pullen* (10¢)
- P 849 Consumer purchases of fresh vegetables: prewar, wartime, and postwar *Rasmussen* (10¢)
- P 870 Consumer packaging as a method of retailing fruits and vegetables produced in the Northeast. Part I. Consumer acceptance and retail losses *Godwin* (10¢)
- P 881 Financial analysis of fruit and vegetable processing plants *Watson* (5)

VENTILATION (see Agricultural Engineering)**WEEDS**

- E 191 Poison ivy and poison sumac *Muenschner* (5¢)
- E 192 Leafy spurge and related weeds *Muenschner* (5¢)
- E 441 Some plants poisonous to touch *Muenschner* (5¢)
- E 698 2,4-D and weed-free lawns *Pridham and Cornman* (5¢)
- E 721 Sulfuric-acid sprays to control weeds in onions *Newhall, Lawrence, and Justice* (5¢)
- E 769 Chemical weed control in vegetables *Carew* (5¢)
- E 816 Weed control in the vineyard *Shaulis* (5¢)
- G 741 Chemical weed control in peas, sweet corn, and beets grown for processing *Dearborn* (30¢)

WELFARE (see Country Life)**WHEAT (see Crops)****MISCELLANEOUS**

- E 794 Wills and other ways to transfer property to heirs *Aikin and Klitzke* (5¢)
- E 854 Elements of organized debate and discussion *Peabody and Sargeant* (10¢)
- E 864 New York farmers' opinions on agricultural programs *Moe* (10¢)
- S 10 Farmhouse planning in New York State *Morin* (15¢)
- S 13 Rural fire protection—a report *Foss* (20¢)
- G 748 Quality of economic poisons sold in New York State in 1950 *Mack and Buchholz* (30¢)
- T 160 Fineness of ground sulfur sold for dusting and spraying *Streeter and Rankin* (10¢)

Announcement of farm study courses

For bulletins E, J, P, and S write the College of Agriculture, Ithaca, N. Y.

Home Economics

ACCOUNT BOOKS

(There is no free distribution of account books. The following prices are based on the costs of printing and therefore apply either to single copies or to quantities.)

Household inventory (25¢)

Home account book *Canon* (25¢)

BOOKS (see Child Development)

CANNING (see Foods)

CHILD DEVELOPMENT

E 420 Working principles for child development *Waring* (5¢)

E 791 Fun for the family *Brooks* (5¢)

E 834 Helping Michael to help himself *Nolan* (5¢)

E 836 Part I. You take it from here. Are bomb drills scaring children? (5¢)

E 836 Part II. You take it from here. Taken for granted? (5¢)

E 836 Part III. You take it from here. These are working mothers (5¢)

*E 881 How do children feel toward younger brothers and sisters *Bellinger and Waring* (5¢)

CLOTHING

E 535 The woman and her posture *Smith* (5¢)

E 654 Marking your fabrics *Staley* (5¢)

E 688 Basting your dress *Staley* (5¢)

E 765 Pressing in dressmaking *Staley* (5¢)

E 793 Pressing equipment *Carney* (5¢)

E 838 Make your furs wear longer *Butt* (5¢)

E 871 Mending clothes and household fabrics *Butt* (5¢)

E 872 How to make fabric buttonholes *Smith* (5¢)

E 876 When you work with rayon and acetate *Lear* (5¢)

P 615 Clothing purchased by farm families in Tompkins County, New York, 1927-28 *Blackmore* (5¢)

P 882 Psychological effects of clothing. I. A survey of the opinions of college girls *Ryan* (15¢)

*P 892 Clothing inventories of outerwear: Part I. 103 New York families *Klitzke* (20¢)

*P 898 Psychological effects of clothing. Part II. Comparison of college students with high school students, rural with urban students, and boys and girls *Ryan* (15¢)

*P 900 Psychological effects of clothing. Part III. Report of interviews with a selected sample of college women *Ryan* (10¢)

S 5 Let's make a dress *Smith* (25¢) No free distribution

S 12 The 4-H Club handbook *Adams and Young* (10¢)

ECONOMICS OF THE HOUSEHOLD (see Household Management)

FLOWERS AND PLANTINGS

E 185 The planting and care of shrubs and trees *Bushey* (5¢)

For bulletins T, G, and C write the Experiment Station, Geneva, N. Y.

- E 265 Pools for home grounds *Bushey* (5¢)
- E 379 Christmas decorations *Smith* (5¢)
- E 403 The rock garden *Skinner* (10¢)
- E 469 The home lawn *Cornman* (10¢)
- E 579 Growing garden flowers from seed *Allen* (5¢)
- E 612 Outdoor fireplaces *Bushey* (5¢)
- E 623 The care of plants in the home *Post* (5¢)
- E 724 Shade trees for the home lawn *Bushey* (5¢)
- E 748 Selecting a building site for farm, village, or city homes *Bushey* (5¢)
- E 749 Landscape steep slopes *Bushey* (5¢)
- E 778 Foundation plantings about the house *Bushey* (5¢)
- E 813 Border plantings and outdoors living rooms for rural and urban properties
Bushey (10¢)
- *E 893 Peony culture *Lee* (5¢)
- J 68 Lawn games for 4-H club boys and girls *Bushey* (5¢)
- J 70 Indoor gardening *Post* (5¢)
- J 96 Perennials for a 4-H flower border *Schaufler* (5¢)

FOOD

- E 618 Drying fruits and vegetables at home *Prudent and Wright* (5¢)
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Freezing fruit *Fenton* (2¢)

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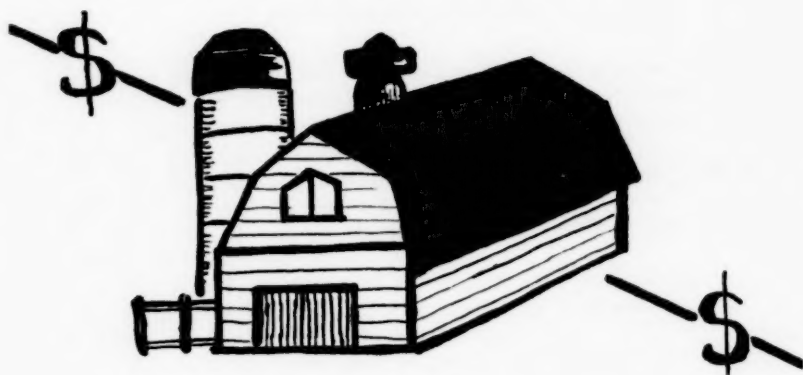
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Financing the



Farm Business

A Northeastern Regional Publication

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This material has been prepared at the request of the Extension Committee of Agricultural Economists of the north-eastern states meeting under the auspices of the Farm Foundation. The sub-committee members responsible for this bulletin are:

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Financing the Farm Business

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Basic Considerations¹

CERTAIN BASIC factors determine the income-producing capacity of a farm business and of the family that operates it, and therefore the ability of a farmer to repay a loan.

The first is *adequate size of business* to make efficient use of labor and machinery. It should have such size that the farmer can obtain an adequate living, carry operating costs (including insurance and taxes), repay loans (both production and real estate, with interest), and gradually increase the owner's equity.

The farm should be operated so as to obtain *high production of livestock and good yields of crops*, using improved operating methods, good seed, new crop varieties, balanced fertilizers, well-bred livestock, and labor-saving equipment and practices.

Production costs should be studied to keep them as low as possible. This requires efficient use of both machinery and labor.

Present capital requirements make *farm business planning necessary* to use every facility to capacity, and to utilize all available outside aids. The amount of capital, new machines, new methods, and larger size require a *high quality of managerial ability*.

Even in this day of specialization, the farm business may need to have more than one important source of income to make fullest use of land, labor, machinery, and capital.

Greater dependence on markets and prices for successful farm operation places greater emphasis on outlook and prices and the ability to fit production more nearly to demand.

Capital Requirements

The greater amount of capital needed today to farm effectively requires more credit and a more effective use of the various kinds of credit. This greater amount of cash needed to operate means that a \$2,500 equity toward the purchase of a \$25,000-\$30,000 farm is much less effective than was \$1,000 toward the purchase of a \$10,000 farm several years ago.

In most of the northeast today, an efficient-sized business means a farm capable of carrying a minimum of 25 cows, or its equivalent in other types of farming, and we are rapidly approaching the time when 35-40 cows may be a minimum essential. At present prices for farm, livestock, and equipment, such a farm operation requires an eventual total investment for farm, livestock, and equipment of over \$1,000 per cow, divided roughly as follows: 40-45 percent in farm, 30-40 percent in livestock, 25-30 percent in machinery, and 5 percent for supplies.

Similar investment for poultry would be about \$10 to \$12 per hen, divided as follows: 50-60 percent in real estate, 25-30 percent in livestock, 15-20 percent in equipment, and 5 percent for supplies.

For apples the investment might be measured in value per tree, at probably \$10-\$15 per tree, divided as follows: 35-40 percent in real estate (excluding trees), 30-35 percent in stock (trees), 25-30 percent in equipment, and 5-10 percent in supplies.

Farm credit is one of the tools used in obtaining more efficient farm operation, and is a necessary, legitimate, and an important element in operating a successful farm business. Like fertilizer, however, a farmer must know *when to use it, how much, and what kind*. This is sometimes difficult to determine, yet the decision has to be made.

Credit Problems

Under present economic conditions, the acquisition of an adequate-sized farm presents many problems. The most important is that of obtaining control of the large amount of capital necessary to purchase and operate such an enterprise. Much of this capital must be obtained through credit.

A major problem in the use of credit is the difficulty of predicting future economic conditions, price relations, and price changes. Over the years, the most important single factor affecting incomes of farmers and their ability to repay mortgage and other loans has been the general price level.²

General Price Level

Inefficiencies in operation, from lack of capital, or machinery, or adequate size, or the inability to adapt to changed or changing conditions, make repayment of a loan difficult even in good times. When the price level is falling drastically, it becomes difficult for the most efficient to repay loans.

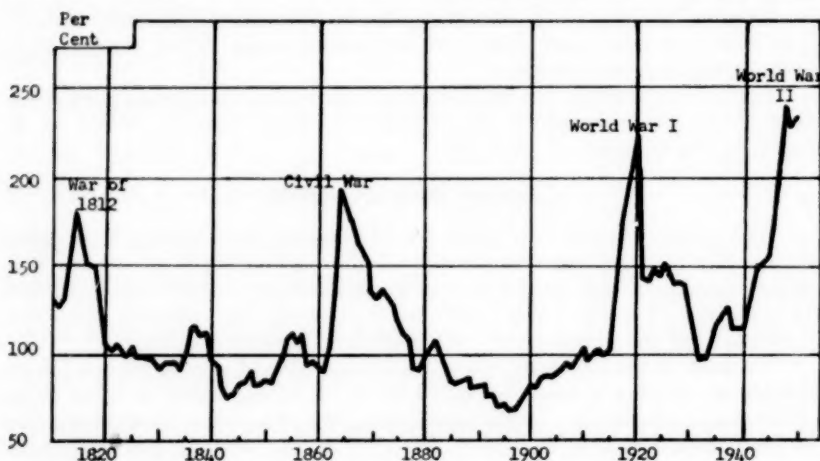


Fig. 1. The General Price Level of the United States

1910-11, = 100 Per Cent

Since farming today must operate on large amounts of credit, *how credit is used is frequently of more importance than its amount*. Not only is it important to use credit wisely because we have to use more of it, but we now have credit developed for various distinct uses. Many can look back to the time when mortgage and dealer credit for farmers were about the only forms available.

Changed Credit Needs

• Today, while dealer credit is still an important source of credit, other sources are now available, better suited for both short and long periods and at a much lower cost. As agriculture has developed out of the more or less self-contained individual business to a vastly important commercial enterprise, these other sources of credit have grown up to meet the need.

The Federal Land Bank system was the first step in the development of a sound, nation-wide, long-term credit system devised for farmers. Since then various other credit agencies have been developed to meet the ever-increasing amount and variety of credit needed by agriculture. Changes in agriculture and banking have led local commercial banks to become interested in developing both their short-term and long-term farm loan business.

Today, short-term farm debt exceeds farm mortgage debt. Such short-term debt will continue relatively large as long as the price level remains high. More cash is required for seasonal production costs, especially for the elements which enter into high yields. With the shortage of labor, more mechanization will be required, and more machinery makes greater income from an expanding farm business not only possible, but necessary. Credit, therefore, is an expanding farm tool.

Types of Credit

Two general principles for the use of farm credit may be stated: (1) Loans should be repaid out of farm income, and (2) The length of the loan period should be fitted to the length of the life of the commodity or the use for which the loan was obtained. This use determines the kind of loan.

There are three general types of credit: short-term, intermediate, and long-term.

Short-Term Credit

Short-term credit usually includes periods up to 12 months and is used for current operating and production needs, such as the purchase of seed, fertilizer, feed, minor repairs, and other similar items. It may be obtained by actually borrowing money on personal note, either with or without chattel security, or buying "on time" from a merchant or dealer. The best places to obtain short-term farm credit are, in general, banks and production credit associations. The cost of credit from banks and production credit associations is usually much less than credit obtained from merchants and dealers. To facilitate short-term borrowings, a credit statement is desirable, with a statement of how the loan will be repaid.

Intermediate Credit

Intermediate credit is for periods of 12 to 30 months. It is used primarily for the purchase of livestock, machinery, for making extensive repairs, or minor improvements such as drainage, fencing, re-roofing, land clearing, where a longer period than one year is needed for repayment.

Credit of this kind frequently avoids a possible curtailing of current farm operations, or causing hardship in family living because of too-heavy loan repayments resulting from the shorter term. Such credit, for purposes of increasing production, *should result in increased future net income*. Where such credit is used for purely personal or family living purposes, and does not increase income, *it can be justified financially only when repayment can be foreseen out of future savings or earnings*.

These intermediate loans are secured by a note or notes, and usually by some form of chattel mortgage or other security instrument in addition. A chattel mortgage includes authority to dispose of the property in case of default.

Long-term credit

This is for periods up to 40 years. Buying a farm requires long-term financing. This is primarily the problem of the younger man, to secure sufficient resources to organize a paying business as well as to establish a home for a growing family. This is the most difficult time in the whole farm ownership period, and legal rules and other forces restrict the amounts that may be loaned at this most critical time. There are instances when a moderate increase in the amount of the loan above that usually considered sound would relieve the operator of some immediate financial worries, and might involve less risk to the lender than a smaller amount. Some changes in our loan system may have to be considered. One such change might be a plan of no principal payment for the first five years of the loan, so that more funds would be available for the young man to get started.

Getting Started In Farming

There are no easy answers to this major problem. It may result in the young man seeking other employment because of the enormous credit barrier to entry into farming.

The Small Farm

Starting on a small farm and working out *is a most difficult way to get started farming*. So much more cash and machinery are now required to compete with good farms adequately capitalized, that the present hand-operated, or under- or over-equipped small farm prevents the owner of a small farm from operating efficiently. One needs to consider carefully before investing savings in a small farm.

Agricultural Ladder

With higher wages and some opportunities for income-sharing, the possibility of getting started in farming by the old so-called agricultural ladder is still open, but the rungs in the ladder are farther apart. Good training, experience, and adoption of good business methods are more essential today, however, because so many more of the costs of farm operation and living are cash costs. A young man must be able to carry on financially much more quickly than in the past.

Working as a hired man to acquire experience and some capital, and possibly establish a reputation, and using accumulated savings to purchase stock and equipment, is a slow method.

Farm Rental

There are some opportunities in the northeast to get started by lease or rental of a farm. Such opportunities presuppose some successful experi-

ence, ownership of some livestock and machinery, and an adequate-sized farm. On the basis of present prices for farms and for livestock and machinery, it usually requires less cash to obtain a suitable farm than to buy the necessary livestock and machinery to operate it.

It is somewhat easier to attain farm ownership by this method by using one's acquired experience and working capital on a *rented farm*. In this way the young man *acquires the use of more capital than he can readily borrow* and at considerably *less cost*. This has the great advantage that one's capital is not tied up in small farm ownership at a time when all one's equity in livestock, machinery, and working capital is needed and can be best used on a farm of adequate size.

Business or Partnership Arrangements

Another method that may be used to get started in farming is by developing a business or partnership arrangement between father and son or sons, or son-in-law, or with another farmer.

Such an arrangement may be by acquisition by contractual purchase of a part or all of the farm business by the younger man. In the latter case his responsibilities would expand as his equity in the farm business increases. Unless there is rather early and increasingly greater delegation of responsibility from elder to younger, dissatisfaction and lessened fulfillment of the farm possibilities frequently result.

Long-time agreements with family, relative, or neighbor should provide for legal and orderly transfer of property to the younger man, if it is the desire of both parties that the younger partner should eventually own the business. *Both parties should be further protected by wills or other suitable legal instruments, so that equitable settlement may be made if and when it should become necessary to dispose of the equity of either party.*

Acquisition by Inheritance

Acquiring a farm by inheritance sometimes raises questions more difficult to answer than that of insufficient capital. Acquiring the farm by marrying the farmer's daughter is a form of inheritance. In both cases one big financial problem is solved if the inheritor is an only child. Even here the hesitancy on the part of the parent to give a gradual and accelerating increase in responsibility of operation and management to the younger couple may result in such dissatisfaction as to make successful operation difficult or impossible.

Where there are other heirs, the necessity for paying them off presents definite restrictions to successful farm operation. Settlement of the estate too early and too abruptly loads the beginning operator with a very heavy debt before he has acquired adequate operating equity. This problem is further aggravated by each additional heir, reducing the operator's share and increasing his potential debt.

A still further difficulty is in establishing a reasonable price for the farm business to avoid insofar as possible a farm price too high when the price of land changes.

Credit Needs For Established Farms

Once the farm is in full operation, credit is usually more readily available. The most serious errors likely to be made at this time are excessive investments in unnecessarily expensive buildings, in land improvement on ques-

tionable land, in the accumulation of unneeded or little-used inventories of machinery, or in spending too heavily for high-priced foundation livestock.

Beyond this period, chief credit needs will be for ordinary production needs or for transferring capital assets to a younger operator. Since a farmer's savings account consists largely of capital assets invested in the farm business, credit will be needed and available in direct relation to his equity. When handled properly, accumulated capital assets can be reconverted to cash for the older owner's use.

How Much Credit To Use

The amount of credit to extend to an individual farm operator depends primarily on his ability to use it efficiently. Probably no two individuals could be loaned the same amount on the same property and expect to arrive at the same goal. There are instances in which the loan obtained has been too small, restricting the operator in the proper development of his farm. Another thousand dollars or two would not increase the risk in proportion and might relieve the operator of worries through lack of operating capital, and give the desired financial leeway to make the operator and operation successful.

The amount of credit to use depends on three things.

1. **How much is needed for efficient operation.** This amount may be the maximum permitted on that farm to that farmer or it may be very much less. This amount and its use will determine whether to use a long-term, intermediate, or short-term loan. It is dependent on the stage of development of, and paying for, the farm business and on the present debt situation of the operator.

2. **How much can be repaid out of operating income.** The question is, will this loan enable the operator to increase his income by an amount at least sufficient to cover additional operating expenses and repay the loan? The first lien on farm income is living for the family, then taxes, then operating expenses. What is left is available for interest and principal payments on the loan. This amount above living and operating costs will determine the size of repayments and the length of the loan period.

3. **How much can be borrowed under reasonable terms suited to the needs of operator and geared to his ability to repay.** Probably most important are the credit sources available in the area, banks interested in loaning to farmers, F.C.A. agencies, life insurance companies, individuals, dealer credit, etc.

The borrower will need to convince the lender of his needs, his repayment ability, the value of collateral, and his personal integrity. All but the last may be shown by use of a credit and operating statement. His personal integrity is an intangible but important part of the loan transaction.

There are limitations on the maximum amounts some lending agencies may loan. These may be determined by loan policy of the individual lending agency or by legal restrictions. The percentages of size of loan to appraisal value of the property, established by the various lending agencies, indicate the usual sound limits. Whether or not the lending agency loans the maximum permissible amount, or any amount, should be determined only after a careful study of the individual's need, his apparent capacity to use the loan efficiently as indicated by his training and experience as a

farm operator, his previous credit experience, and his present equity, especially in personal property. This should all be in reference to the general economic situation.

Obtaining credit in the amount and on the terms desired by, and suited to, agriculture may be limited by the desire of the local lending agency to make the desired kind of loan. Some banks in industrial areas may be too small to want to loan in the amount desired. They may prefer to make several small loans of \$2,500 each, rather than one large loan for \$25,000. This may change the farmer's loan program or the source of credit.

Sound Rules For Using Credit³

In order that credit may best serve the borrower, consideration should be given to the following points:

1. Obtain credit where they specialize in selling it, i.e., banks, production credit associations, land banks, life insurance companies, etc.

2. Keep loans within safe limits. Borrow an amount large enough to assist materially in increasing net profits, but an amount which can be repaid. Work out a repayment plan for every loan.

3. Borrow for productive purposes. See that the money actually serves the purpose for which it was borrowed.

4. Budget the expenditures of the loan money as well as anticipated income. Have a definite plan.

5. Make credit contacts well in advance. File credit and operating statements. Get acquainted with the lending officials and agencies. Keep them informed about plans and progress.

6. Select an agency and a type of loan best suited to needs. Other things being equal, borrow at the lowest interest rate, preferably one that is guaranteed for the life of the loan.

7. Consider the outlook for markets and prices. Determine the productive period of the enterprises for which loans are to be used. Repayment should be made during such period.

8. Pay cash and get the discount on purchases of seed, feed, fertilizer, livestock, machinery, and other farm supplies.

Establishing A Good Credit Standing³

The right use of agricultural credit is sound business procedure and it should serve to increase the net income from the farm. A good credit rating is a valuable asset; it should be established with the proper lending agencies as a matter of sound business policy. It may provide the means by which one can take advantage of immediate business opportunities when they arise.

There are seven important points which should be followed in establishing a good credit rating:

1. File annual credit and operating statements with the local lending agency. A credit statement shows your financial condition and net worth. An operating statement shows your receipts and expenses (see Appendix A).

2. Take annual inventories and keep records of cash receipts and expenses. Account books provide space for these.

3. Keep a farm account book. One may be obtained from the State Cooperative Extension Service or from the local county agricultural agent.

4. Utilize accounts in preparing a financial statement as well as in improving farm practices. A financial statement is a summary of receipts, expenses, and income for the year.

5. Prepare a budget of probable expenses and income in advance of each year's operations to serve as a guide.

6. Have a repayment plan for every loan.

7. Take care of credit obligations on time. Promptness in meeting debt obligations is important.

Complete Financial Planning²

The increasing use of credit in farm operation, the number of credit agencies, the great variety of credit available, and the uses to which it may be put emphasize the need of a complete financial plan for the farmer on his farm.

The farm mortgage loan is only one of the several credit transactions that a farmer may have with a bank or other credit agency. The combination of farm mortgage, chattel mortgages, and other evidences of financial obligation, depending on the kind and volume of credit needed, make it very desirable that the farmer select that credit agency which he feels will best meet his complete financial needs whether it be the local bank, production credit and the land bank, or other credit agency. Once this selection has been made the credit needs of the farmer will usually best be met by developing his whole financial program with that lending agency. It means establishing but one credit rating, one schedule of planned repayments, and one credit program.

The adoption of such a plan means that the farmer and his credit agency may well study the over-all needs of the individual farm operation in order to be in a better position to provide the credit agency's financial service and to plan for the kind and amount of machinery, livestock, seeds, fertilizer, maintenance, and other items required for maximum efficiency in producing maximum net income. Estimates of farm income and expenses can be carefully worked out and a financial program set up with disbursement schedules timed to meet operating expenditures, and repayment schedules geared to sale of farm crops and livestock. The terms of such a planned financial program will of course be determined by the repayment capacity of the farm unit.

Special Credit Needs

Special Service Mortgage Lending²

The importance of soil conservation to maintain and increase the productive capacity of our agricultural industry presents opportunity for extending credit for necessary soil conservation practices. *This requires a very flexible credit program tailored to meet special and individual needs.* Some of this may be long-term or mortgage credit.

G. 1. Farm Mortgage Loans²

The first problem in connection with veterans' farm purchase loans is to protect the veteran against contracting excessive debts based on two

false assumptions: (1) *that the loan may be considered as a grant and pressure will not be used to obtain repayment*, and (2) *that the bank may over-loan because the loan is guaranteed*. Both ideas do not make for sound loan policy.¹

Full-Value Real Estate Loans

Studies of Farmers' Home Administration 100 percent real estate loans on dairy farms in Wisconsin show that in periods of stable or rising prices farmers can pay off such loans and still maintain an adequate standard of living. In periods of falling prices, such loans are much more difficult to repay.

The purchase price of a farm now, however, is probably less than half of the total cost of an operating farm business. Livestock and machinery require at least as much capital as for the farm itself for a farm operation which will provide an adequate living for the family, pay operating costs, and retire the debt.

For the younger man who desires to farm but lacks sufficient capital, both to buy the farm and to stock and equip it, the best plan may be to rent, or work out a partnership arrangement on a good farm. Loans from either individuals or the Farmers' Home Administration may, however, be considered. Insufficient funds have been made available to F.H.A. so that relatively few such opportunities exist in several states. Such loans presuppose that the prospective buyer have a reasonable amount of his own capital for livestock and machinery to begin adequate operations.

Part-time Farmers²

Changes in our economy, with good roads and the 40-hour week, provide many families with the opportunity to work in the city but live in the country. These families vary all the way from the full-time worker with a home in the country to a nearly full-time farm worker with a job off the farm.

They constitute a large and growing proportion of our rural population in the northeast. Some special credit attention needs to be given them. *Loans and repayments should be based on city income*, since in most cases repayment installments must be larger than the productivity of the farm would justify.

Special Credit Problems

The extension of credit for certain items needs special consideration. *Investment in purebred stock is one that may well be postponed* until such time as the herd is large enough, with production sufficient to carry operating as well as loan repayment expense. One might suggest the plan whereby a dairyman who had built up to a herd of 25 good grade cows could probably afford to invest in two or three purebreds as foundation stock on which to build a purebred herd. The present artificial breeding establishments in the various states change both grade and purebred breeding programs, providing better replacements than could be obtained by individual ownership of a bull, the value of which would be limited by the size of the herd. No high investment in a really good bull is necessary until such time as herd size and farm income warrant individual bull ownership.

Investment in machinery and equipment may also be a financial quicksand. Tractor and land-fitting tractor equipment are necessary. Investment in some of the lately developed harvesting machinery should be studied.

Actually some of the better harvesting machinery, already owned and more effectively used, may be better than the latest machinery inefficiently used, either because of some inadequacies in accompanying machinery or inadequacies in method. The trend toward grass silage seems to indicate a need for ownership of a forage harvester, but before purchase one needs to investigate the opportunities to hire from a neighbor or carry part of its cost by doing work for other farmers. Credit for the purchase of such machinery must be based on an ability to repay the loan from savings or increased income.

With 25 cows as the basis of farm operations, the question arises as to the need for ownership of many of the larger items of farm machinery. Shortage of labor may force the issue. Then the question arises whether to own, with its high costs but opportunity to use at the most satisfactory period, or rent, with the inconvenience of not being able to have its use at the right time.

If the machine can be hired without much inconvenience, its rental permits the use of capital for other possibly more important things.

It will usually pay to hire machine work, if it can be done at the right time and its cost is no more than the cost of use of the owned machine. In some localities of the northeast, custom use of machinery is available for almost every job.*

The need for new or remodeled buildings in many instances forces such investment. But in other cases this investment may be postponed by some simple and inexpensive rearrangement or change in method of doing chores. A young man starting farming may save something on immediate high cost for a conventional stable, by providing a milking parlor and pen stable in the barn area, which might if desirable be converted later into the conventional stable.

Although cost of remodeling a stable may be as great as a new stable, the additional cost of maintenance of the larger building may be greater than any increase in possible savings brought about by the new stable.

Most successful farmers use both short- and long-term credit for efficient operation. The following are the usual sources of farm credit: (1) merchants and dealers, (2) state and national banks, (3) production credit associations, federal land banks, and other government supervised credit agencies, (4) life insurance companies, (5) individuals making direct loans to farmers, and (6) individual sale with mortgage.

Credit Sources and Costs

The best place to buy anything is usually at a place that specializes in the article or service desired. So it is with credit. In general, credit should be obtained where it may be purchased at the lowest cost.

Merchant and Dealer Credit³

Many times it is easier and quicker to obtain some credit needs from a merchant or dealer from whom one buys farm supplies. *Such credit usually costs more than credit* from a bank or production credit association.

**When to Hire and When to Own Farm Equipment on New England Dairy Farms*, G. E. Frick and S. B. Weeks, University of New Hampshire Extension Service, Circular 302.

Certain facts developed in a study of dealer credit in Vermont are generally applicable. Only a small percentage (10-15) of such dealers charge interest, and many of these do not collect it. Cattle dealers regularly, most implement dealers, and 10-15 percent of the grocers use some evidence of indebtedness such as notes. Not all merchants make a direct credit charge. Many feed dealers give a cash discount on feed of one to two dollars per ton. Some suppliers give a one or two percent discount for cash. This means that the credit customer frequently pays one to two percent per month for credit, the equivalent of a high annual interest charge.

Credit Costs in Buying Feed

The following table will illustrate such cost. The farmer is assumed to have purchased four tons of feed each month. The cost of borrowing the money at six percent from a bank and paying cash for grain, is compared with buying it on credit at one dollar and two dollars per ton more. Assume that the farmer pays his bills in full at the end of each month. The annual interest rate is based upon the maximum amount of credit used at any time.

Table 1. Comparative Costs in Purchasing Feed on a Cash and Credit Basis

	(A) Cash	(B) Credit	(C) Credit
Amount purchased monthly	4 tons	4 tons	4 tons
Cost per ton	\$90	\$91	\$92
Monthly expenditure	\$360	\$364	\$368
Credit source	Bank	Dealer	Dealer
Cost of credit	6%	\$1 ton	\$2 ton
Maximum credit used	\$360	\$364	\$368
Credit cost per month	\$1.775	\$4.00	\$8.00
Credit cost per year	\$21.30	\$48.00	\$96.00
Equiv. annual interest rate	6%	13.19%	26.09%

In actual practice, some feed companies consider payment in 30 days as a cash transaction. In that case, 30 days additional time for payment might be allowed in each example. But feed companies find greater difficulty in maintaining a discount schedule for cash at 30 days because customers "forget" to pay in time but still hope the dealer will grant the discount. Loss of good will sometimes results.

The convenience and the service rendered in making credit available may be even more important than the cost. When higher risks are involved, you should expect to pay a higher interest rate. Farmers sometimes receive dealer credit when they cannot get credit elsewhere.

In the foregoing example and the one which follows on the purchase of a tractor, we should not assume that the farmer did not get value received at the higher rate. The dealer may have had to borrow money from a bank and reloan it as credit to the farmer or he may have to assume obligations if the farmer fails to make payment. Many dealers extend credit in order to make sales and yet would actually prefer to stay out of the credit business. Some turn credit sales over to a finance company. This is rather common practice on automobile and machinery sales. But most feed companies extend credit directly to farmers.

Some dealers do not make a regular practice of either allowing discounts or adding on for credit. But if the purchaser wishes to pay cash, he should ask for a discount. Otherwise he is actually helping to carry the credit cost of the man who does not pay cash.

Credit Costs For Buying a Tractor³

In the purchase of machinery and automobiles, the buyer often makes a down-payment, with the balance in a number of equal monthly installments which include principal and interest. Insurance and financing may be included in such payments.

It is usually less costly to borrow money at a bank or production credit association on a straight note and pay cash for the machine at time of purchase.

The following illustration on the purchase of an \$1,800 tractor shows the cost of two methods of financing. In each case the farmer assumes he can save enough to pay \$100 per month on the principal, plus interest charges.

Table 2. Comparative Interest Costs on Purchase of a Tractor Under Two Finance Plans

	Type of Finance Plan	
	Money borrowed on four three-months' notes, interest at annual rate of 6%	6% added to amount borrowed and total paid in 12 equal payments
Down payment	\$ 600	\$ 600
Amount needed to pay balance	\$1200	\$1200
Total amount of loan	\$1200*	\$1272 (\$72.00 interest in advance)
Average amount available (12 months' basis)	\$ 750	\$ 650
Dollars paid in interest	\$ 45	\$ 72
Interest rate expressed as annual rate	6%	11.08%

*Assume the payment of \$300 on principal, plus interest on each 3-month note.

Farm Loans From Individuals

Data on farm mortgage and other loans by individuals are difficult to obtain, but indications are that such loans constitute a very important source of farm credit. Its *advantages* are: arrangements for the loan may be made quickly, a larger percentage of the purchase price may be retained by the lender as mortgage, frequently a low interest rate is charged, and by agreement no payments on principal may be required in the early years.

Its *disadvantages* are: usually a short term, a renewal fee, the possibility of forced maturity of the loan because of change in family status or death of the lender, frequently no regular amortization plan, and the possibility of a high interest rate.

Bank Credit³

Types of Banks and Services They Render

National banks are under the supervision of the Comptroller of the Currency, the Federal Reserve System, and the Federal Deposit Insurance Corporation. They make both secured and unsecured loans. Their loans include personal loans with and without good endorsers or co-makers, collateral loans using interest account bank books, life insurance policies, and stocks and bonds as security. They also make loans on cattle, automobiles, household furniture, etc., secured with chattel mortgage or chattel mortgage

with power of sale. The latter is used as extra protection for the bank because it puts the bank in position, in case of default, to foreclose the mortgage and dispose of the security. National banks also make many unsecured loans to persons whose credit statements and demonstrated capacity prove their ability to repay. National banks are limited on real estate mortgages to 50 percent of the appraised valuation, although they may loan to 60 percent if the loan is amortized and 40 percent of it is repaid in 10 years. In the case of a loan on timber land or agricultural land, national banks cannot make a loan unless there are buildings on the property.

Savings banks are under the supervision of the State Bank Commissioner or Superintendent of Banks in the state concerned. Their principal loans are those secured by real estate mortgages, either on residential or farm property. Savings banks cannot make a loan secured solely by a chattel mortgage on cattle, automobiles, etc. In some states they can make chattel loans in association with a real estate mortgage and included in the amount of the real estate mortgage. This is done occasionally when a farmer wishes to purchase more cattle or equipment in order to increase his earning power. Savings banks may make loans on timber land or agricultural land even though there are no buildings thereon. In some states they may also make personal loans with good signers, or collateral loans secured by savings bank accounts, insurance policies, or stocks that are on the legal list compiled by the office of the Bank Commissioner.

Trust companies are of several types. They may include national banks that have been granted trust powers or state-chartered commercial banks and guaranty savings banks that have taken on trust powers. In addition to their respective banking functions, they may also settle estates, act as trustees for estates and institutions, and act as fiscal or transfer agents.

State-chartered commercial banks may loan to farmers for any sound purposes *that give promise of repayment and that are without undue hazard to the lender*. In addition to the restrictions, based on sound credit principles, state-chartered commercial banks must observe the following limitations: (1) the total loan to any one borrower from the commercial department may not exceed 10 percent of the bank's capital and surplus, and (2) no real estate loan may exceed a percentage, fixed by state law of the value of the security. (This limitation does not apply to G. I. loans or loans insured by the Federal Housing Administration.)

Differences Between Savings and Commercial Banks

Banks differ in their operations, depending upon the purpose for which they were organized and the laws under which they operate. One major distinction is between savings banks and commercial banks. This distinction is more clear-cut in some states than in others. Commercial banks frequently have savings departments. Some banks have a strictly commercial and a strictly savings bank as separate corporations in the same building, frequently on opposite sides of the same lobby, with the services of one bank supplementing the services of the other.

In general, people deposit money in a savings bank: (1) to accumulate funds for some future need, and (2) to earn interest on their money when they are not using it. (Usually no interest is paid on demand deposits in commercial banks.) Thus, deposits of savings banks are less active than deposits of commercial banks. For that reason, savings banks may safely invest a large proportion of their deposits in real estate mortgages which are

repaid less quickly than current operating loans. Commercial banks, because their deposits are repayable on demand, must make a higher percentage of their loans for short periods of time.

In general, applicants for bank credit may look to savings banks for first-mortgage real estate loans and to national banks and state-chartered commercial banks for both short-term operating and mortgage loans. State-chartered commercial banks also make yearly mortgage loans, but emphasis is placed on operating loans.

Banks have credit to sell. It is one of the important services which banks render to provide income. When a farmer goes to a bank for a loan he should not feel that he is asking a favor. *He should consider it a business transaction and he should have the necessary facts for presentation.* Mr. Paul Henderson, Secretary of the Agricultural Committee of the New Hampshire Bankers' Association, makes this statement concerning applications for loans:

"In order to enable a banker to give fast service and get an accurate picture of a farmer's situation, it would be helpful if the following information were available at the first interview: (1) a statement of the applicant's previous farming and business experience, (2) a carefully drawn-up plan of his anticipated operations for at least one year in advance, (3) the acreage of his farm, and the size, condition, and adaptability of his buildings, and (4) a list of his assets and liabilities, together with a statement of his net income or profit for the past year or two."

Need for Agriculturally Trained Bank Personnel³

A few banks have technically trained personnel who know agriculture and its needs — farm raised men with agricultural college training. Others have some one officer who is familiar with farming and who handles farm loans. To help in this field the American Bankers Association has recently issued a pamphlet entitled *An Outside Program for Country Bankers*.

The objectives of such a program are to (1) increase agricultural income of the community which in turn will be reflected in growth of the bank, (2) make possible more personal and more frequent contacts with potential farm customers, (3) provide a more accurate means of loan appraisal and more effective consultations between the bank and its farm customers as to their credit needs, (4) lend the bank's support in an active way to existing programs for the improvement of agricultural income and rural living, and (5) provide credit facilities that can be tailored to the needs of the farmers in the community.

Repayment Plans¹

Any plan the prospective borrower presents should indicate what income is expected and that it can meet both living and operating expenses and the payments of principal and interest. It should show how the loan will increase his ability to pay and the method of repayment. Repayment plans vary with the type and purpose of the loan.

Loans should be amortized on a plan adapted to the borrower's ability to repay. The loan contract should permit, and the borrower should take upon himself, repayment of the loan faster than the contract calls for, yet not so fast as to restrict his usual farming operations.

Subject to applicable banking laws, both the length of time the loan is to run and the frequency of payment should depend upon (1) the type

of farming, (2) the productive capacity of the farm, (3) the size of the loan, and (4) the borrower's ability to meet the payments. On crop farms it is usually desirable to have payments made at the time the crops are normally sold. On dairy and poultry farms, monthly, quarterly, or semi-annual payments are desirable.

Amortization Loans²

Every farm mortgage should have a "pay day". A farm mortgage is a long-time investment. Much can happen to prices that will affect the repayment ability of the farmer. Unless regular payments are made to reduce the indebtedness, the farm may be lost when low prices and heavy unreduced debt coincide. Amortization of the loan is particularly important, so that even with lower prices there still remains enough farmer equity in the farm business so that the owner can pay out.

With loans from individuals, repayment plans are likely to be variable and frequently not on an amortization plan. Banks use commonly one of two plans: constant payment and diminishing payment.

The most common amortization plan is the constant payment plan which calls for the same number of dollars to be paid to the bank on each payment throughout the life of the loan. Thus the interest share of the payment decreases and the principal share increases.

Banks have found that the straight business loan payable in full at maturity or on demand is undesirable for both borrower and bank, except when made in a very conservative amount or on desirable property to a borrower who has good reasons for not making installment payments on principal. This is especially undesirable for a farm mortgage loan.

Monthly payment loans are desirable on dairy and poultry farms where income is regular and repayment may be scheduled to receipt of milk or egg checks.

Budget type loans are tailored to fit the needs of the operator requiring increasing amounts of credit over a more or less definite period such as in construction or improvement work. Advance commitments are made by the bank which assure the borrower that funds in specific amounts will be available as needed.

Bank Loans³

As agriculture becomes more commercialized, commercial banks expand their agricultural loans. Formerly most of such business was for operating loans and only a small percentage for real estate loans. In more recent years, however, commercial banks have been rapidly expanding their farm mortgage business. Banks have been and will continue to be the most active institutional lenders to farmers. Farmers need bank services. The great variety of operations in agriculture require adequate and reasonable financing, from the simplest of operating loans to long-term farm mortgages. The local banks have a real opportunity and a responsibility to serve. Theirs is a double function to loan money for the various agricultural purposes and to help the farmer keep in a sound financial position.

Size of bank loans. Banks loan from 40-70 percent of the appraisal value on real estate. The maximum amount varies.

Maximum period. The majority of banks make real estate loans from 5-15 years. A few loan for longer periods.

Interest rate. Most banks charge five percent on real estate loans, although some charge six percent on small loans, and on other types of short-term loans six percent is the usual charge.

Repayment of loans. The majority of banks prefer a monthly repayment basis or at least some regular and planned method of repayment.

Cost of obtaining loans. There is usually no charge made in arranging small loans unless a chattel mortgage is required. On real estate loans, costs of abstract of title and recording of mortgage are usually borne by the borrower. Some banks make a charge for appraisal but the practice is in general declining.

Advantages. Bank loans are usually available on short notice and immediately available where a credit rating has been established. Even where mortgages are involved service is usually as fast as can be obtained anywhere.

Disadvantages. Formerly, most banks wrote notes of from one to four months on ordinary type loans. They have found by experience, however, that this is not long enough for financing most farm operations. Some banks make demand loans with terms on a monthly repayment schedule that run from 3-30 months. Some draw notes for 12 months and some have 3-month notes renewable until loan is repaid. Nevertheless, there may be an element of uncertainty involved in case an extension may not be granted, even though needed. Very few banks will write real estate loans to run as long as the Federal Land Bank or governmental agencies.

Production Credit Associations³

These are cooperative organizations designed to extend short-term credit to farmers. They are set up by farmers for farmers. Five directors are elected from the membership. The loans made are technically short-term, but are often written with an agreement concerning renewal. While individual notes are written for 12 months or less, the loans for cattle or heavy machinery may run up to 2½ years.

The net rate of interest is slightly above the stated interest rate, as the borrower is required to own stock at the ratio of \$5 for each \$100 or fraction thereof borrowed. It has the advantage, however, that this stock can be used for further loans or may be sold to other members when the loan is retired. Some production credit associations have paid dividends on such stock. There is an association charge of ½ percent as a service fee, such as recording of chattel mortgages. Some loans are made without chattel mortgages where credit ratings are very good. Interest is paid only on money used, so that repayments will reduce the interest charge. A summary of facts on production credit loans follows:

Loaning Agency. Contact local Production Credit Association offices (See Appendix B).

Who may borrow. A farmer in sound financial position with indication that he has ability to repay the loan.

Principal purposes for which loans are made. General agricultural purposes, including financing, producing, harvesting, and marketing agricultural products; breeding, feeding, and marketing livestock; repair and alteration of buildings; purchase of machinery, equipment, fertilizer, seeds, and spray materials; to refinance indebtedness; also for rent, taxes, interest, insurance, and medical costs.

Maximum loan. It in general depends upon the farmer's sound need for credit and his ability to pay out of income.

Maximum period. Twelve months, but subject to renewal for certain types of loans.

Interest rate. The rate is six percent a year on the unpaid balance only. (One association charges five and one-half percent.)

Time required to obtain. Usually from one to six days is the time required to obtain a loan, unless the borrower has arranged a line of credit in advance.

Repayment. Each loan is treated as an individual case to arrange repayments which will come due when there will be income to meet them. For example, loans to be repaid from dairy income provide for monthly payments, whereas a loan to grow potatoes need not mature until the crop is harvested and sold. Poultry loans usually mature in a year. Livestock, machinery, and improvement loans may be repaid over two to two and one-half years. But all notes on these larger loans are written for a maximum of one year.

Cost of obtaining loan. Fixed costs include the ownership of \$5 in stock for each \$100 borrowed. While this is not actually a cost, it is a necessary expenditure. Costs not fixed are the loan service fee and recording fees, if any, on the chattel mortgage.

Advantages. You can draw the money as needed. Interest is paid only on the money as used. Repayment can be made under arrangements which are suitable for your conditions. The organization is a cooperative.

Disadvantages. Production credit associations, as do most banks, sometimes require a chattel mortgage. Cost of the loan is higher than the quoted rate when purchase of stock, appraisal, checking on encumbrances on chattels, and registering the chattel mortgage when required are included.

Federal Land Bank Loans³

Loaning agency. National Farm Loan Associations, through the Federal Land Banks, are fully farmer owned and operated cooperative agencies for loaning money to farmers on farm mortgages. Loan funds are obtained from the sale of debentures and bonds to the investing public through the agency of the Federal Intermediate Credit Bank.

Principal purposes for which loans are made. To buy land, construct buildings, make farm improvements, pay farm debt, purchase equipment and livestock, educate children, and for any agricultural purpose.

Maximum loan. Up to \$100,000. The loan may be made up to a maximum of 65 percent of the appraised normal agricultural value of the security.

Maximum period. Usually 20 or 33 years.

Interest rate. At present the rate is four and one-half percent and may not be raised during life of loan.

Repayment. The loan is amortized. Repayment may be made in semi-annual installments which cover the interest on the unpaid balance, plus a small portion of the principal. On the 20-year and 33-year plans, required payments on the principal each six months would be \$25 and \$15, respectively, per \$1,000 of the original loans. The principal payment is in addi-

tion to the half-year's accrued interest on the unpaid balance of the loan. Special repayments are permissible at any regular payment period.

Security. First mortgage on the farm real estate.

Cost of obtaining loan. The fixed cost is \$5 in stock of the local association per \$100 of loan obtained. Costs not fixed include the appraisal fee, not to exceed \$10; recording and closing fees to the association, usually not over one percent; and title search.

Advantages. Low interest rate which holds for entire period of the loan, long period for repayment with no renewals necessary, loan paid in many relatively small amounts (amortized), and borrower has the privilege to pay more than the required installments and thus get out of debt sooner.

Disadvantages. It takes some time to put the loan through.

Comment. Farm Loan Associations, and the Lank Bank itself, are credit cooperatives which are set up to meet more fully the special needs of agriculture. Both obtain their loan funds by selling debentures and bonds to the investing public.

Life Insurance Company Loans

Life insurance companies invest nearly 25 percent or \$37,371,000 of their investment funds of \$1,518,100.00 in farm real estate mortgages in the 12 northeastern states.

Information about such funds, their availability, interest rates, appraisal costs, applications, amortization plans, etc., may be obtained from any local insurance company representative.

Bank For Co-operatives Loans³

Loaning agency. Bank for Co-operatives.

Principal purposes for which loans are made. They are made to agricultural co-operatives for construction, purchase, or refinancing indebtedness on physical facilities; ordinary operating expenses, payrolls, carrying inventories and other current needs; and loans on properly stored staple commodities for possible advances to members.

Maximum period. Physical facility loans, usually not over seven years (occasionally ten years); operating capital loans, one year (occasionally three years); commodity loans, usually not over nine months.

Interest rate. Physical facility loans, four percent; operating capital loans, three percent; commodity loans, two and one-quarter percent.

Repayment. Physical facility loans are amortized, usually in regular installments; operating capital loans, when amortization is optional, usually are paid at the end of the season; commodity loans, which are not amortized, usually are paid from proceeds of collateral sold.

Cost of obtaining loan. There are no fixed costs. Costs not fixed are possible legal expense on the part of the co-operative in closing loan.

Advantages. Low interest rates, especially suited to co-operatives, and bank renders advisory service.

Comment. The Bank for Co-operatives assists and encourages the co-operatives, which borrow from it, in setting up better systems of records, establishing more sound credit policies, improving membership relations and finances, and in keeping regular and complete audits.

Farmers' Home Administration Loans³

The Farmers' Home Administration was set up to provide credit for those farmers who could not get credit at the usual reasonable business rates, and who, in spite of financial difficulties, seemed to have a good chance to pay out.

Operating Loans

Loaning agency. Farmers' Home Administration (see telephone directory for nearest local office).

Principal purposes for which loans are made. The purchase of livestock, equipment, feed, fertilizer, and seeds; farm operating costs and home living expenses; household expenses and family subsistence, including medical care.

Requirements for obtaining a loan. Borrower must be a farmer earning most of his living by farming or have experience in farming and want to operate a family-type unit for the principal part of his family living. He must not be able to borrow elsewhere at reasonable rates. He must be a citizen of the United States.

Maximum loan. In one year, \$7,000; in total, \$10,000.

Security. A mortgage on the chattels bought and on crops and livestock raised.

Maximum period. Seven years, if circumstances warrant.

Interest rate. Five percent.

Repayment. As suited to needs, but annual or sometimes more frequent payments are necessary.

Cost of obtaining loan. There is no cost for application, but a fee is charged for recording the chattel mortgage.

Advantages. It follows the Land Bank farm loan amortization plan. The borrower receives guidance from a supervisor, the cost of obtaining the loan is low, and requirements are less exacting because loans are made when other sources are not available.

Disadvantages. Tendency to over-loan on properties that sometimes lack the opportunity for expansion at a later date.

Where to apply. Ask the county agent for name and address of the local farm home loan secretary.

Comment. Loans are possible where other credit would not be obtainable. It is of interest to veterans and others who have ability but little capital.

Farm Ownership Loans

Loaning agency. Farmers' Home Administration.

Principal purposes for which loans are made. The purchase of a productive family-type farm, enlargement of your present farm, repair or remodeling of buildings, land drainage, irrigation, and land clearing.

Requirements for obtaining a loan. Persons eligible must be: (1) a veteran, farm tenant, farm laborer, share-cropper, or the owner of an inadequate or under-improved unit, (2) a citizen of the United States, and (3) unable to get a loan elsewhere (at rates not exceeding five percent).

Maximum loan. Up to \$12,000 or to 90 percent of the appraised value on insured loans. Conservative values must apply because these are long-term loans.

Security. First mortgage on real estate.

Maximum period. 40 years.

Interest rate. Four percent.

Repayment. The loan is amortized. Payments as low as \$50.52 per \$1,000 can be made as in a 40-year loan.

Cost of obtaining loan. There is no application cost, but a recording fee is charged.

Advantages. A small amount of capital is required, the loan is available on a long-term basis, repayment may be made in small units, the agreement permits refinancing, and supervisory help is given. Disabled veterans on pension may be able to secure a loan.

Where to apply. Ask the county agent for the name and address of the local farm home loan secretary.

Comments. Insured mortgage loans involve funds from private lenders. The requirements and conditions are similar. However, a \$20 appraisal fee is charged.

Farm Housing Loans

Loaning agency. Farmers' Home Administration.

Principal purposes for which loans are made. They must be used to construct, improve, alter, repair, or replace farm buildings.

Requirements for obtaining a loan. Persons eligible must: (1) be a farm owner, (2) have insufficient resources to provide necessary buildings, and (3) be unable to secure credit from other sources on terms which are reasonable.

Maximum loan. There is no definite limit except for \$1,000 on minor repairs.

Security. First mortgage on real estate.

Maximum period. 25 years for \$2,500 to \$7,000; 20 years for over \$7,000.

Interest rate. Four percent.

Repayment. Amortization over 5 to 25 years.

Cost of obtaining loan. Fees incidental to making and closing loan.

Advantages. Its low cost, its help to those who are unable to get loans from other sources, and the amortization terms to suit the needs of the borrower.

Where to apply. Ask the county agent for the name and address of the local farm home loan secretary.

Veterans Administration Guaranteed Loans³

Loaning agency. Banks, loan associations, and private lenders (See classified directory in the telephone book or contact the Veterans Administration; also see Appendix B).

Principal purposes for which loans are made. The purchase of farms, construction or improvement of farm buildings, and purchase of livestock or machinery.

Requirements for obtaining a loan. Borrower must be a veteran of World War II.

Maximum loan. Indefinite.

Security. First mortgage on real estate loans; a chattel mortgage may be required on machinery and livestock loans.

Maximum period. 40 years, on real estate mortgages; 10 years, on chattel mortgages.

Interest rate. Maximum of four percent.

Repayment. Any loan of five years or more must be amortized.

Insurance features. The Veterans Administration guarantees payment of 50 percent of the loan to the lender to a maximum of \$6,000.

Cost of obtaining loan. Appraisal fee is usually \$15 to \$20; an abstract of title and recorder's fee is also charged. The Veterans Administration pays four percent of the amount guaranteed to the lender; this amount is credited to the borrower on the loan.

Advantages. The terms are very liberal. Real estate loans may not exceed the appraisal value of farm. Non-real estate loans are limited to "reasonable" value, but may be 100 percent loans if approved. Little capital is needed, if the borrower appears to be a good risk. Interest rates are reasonable, and the terms are suited to the borrower's needs. Repayment is allowed over a long period.

Where to apply. At the local bank. If the bank does not make these loans, obtain information from the state Veterans Administration office.

Comment. Veterans should bear in mind that if they fail to meet payments and their property should be sold for less than the obligation, they are still held for any shortage due the Federal Government.

Federal Housing Administration Insured Loans

Under the National Housing Act the Federal Housing Administration insures loans made by banks and others. It loans no money. Interest rates and some terms may change.

These loans are of three types: (1) for repair, alteration or improvement of existing structures, (2) to be used in whole or in part for agricultural purposes, and (3) for construction and repair of farm buildings. Information about such loans may be obtained from the local bank.

References

- (1) Agricultural Production Financing, American Bankers Association.
- (2) Farm Real Estate Financing, American Bankers Association.
- (3) Agricultural Credit for New Hampshire, L. A. Dougherty, New Hampshire Extension Circular 304.

Appendix A

Credit and Operating Statement

Statement of
 Business Address
 To Bank of

I make the following statement of all of my assets and liabilities at the close of business on the date named below and give other material information for the purpose of obtaining from you advances on notes and bills bearing my signature or endorsement and for obtaining credit generally upon present and future applications.

Condition at close of business on the day of 19.....

ASSETS:	Valued at
Farm (No. acres) including buildings thereon.	
Assessed for \$.....	\$.....
Location	
Horses (No.)	
Cattle (No.)	
Sheep (No.)	
Hogs (No.)	
Poultry (No.)	
Feeds and crops on hand	
Miscellaneous supplies	
Equipment	
Fall plowing	
Other growing crops	
Growing timber	
Cash in banks	
Cash on hand	
Other personal property	
Notes receivable	
Accounts receivable	
Total	\$.....

LIABILITIES:	
Mortgage on real estate	
(Mortgagee)	
Notes	
Owing for fertilizer	
Other debts	
Store accounts	
Chattel mortgages	
Total	\$.....
Net Worth	\$.....

Fire Insurance on buildings \$..... Fire Insurance on other property The legal and equitable right to all the above real estate is in my name solely, except as follows: Automobile insurance: Liability Property damage Fire and Theft Collision Life Insurance Who is the beneficiary	I am also liable: On indorsed notes I have pledged future income as follows: Milk checks Field crops Taxes \$..... My age is Married or single Wife's name
--	---

I hereby certify that the figures, information, and statements contained on this sheet, all of which have been read by me before signing, are true and give a correct showing of my financial condition on the date stated.

Signed this day of 19..... Name

Appendix B

Agricultural Credit Directory

Individuals

By inquiry locally

Bank loans

See your telephone classified directory under banks (commercial banks, co-operative banks, savings banks, trust companies)

Co-operative Association Credit

Bank for Co-operatives, Springfield, Massachusetts

Serving Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey

Bank for Co-operatives, Baltimore 3, Maryland

Serving Pennsylvania, Delaware, Maryland, Virginia, West Virginia

Federal Land Banks

Federal Land Bank of Springfield, Massachusetts

Serving Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, and New Jersey

Federal Land Bank of Baltimore, Baltimore 3, Maryland

Serving Pennsylvania, Delaware, Maryland, Virginia, and West Virginia

Production Credit Corporation Loans

Production Credit Corporation of Springfield, Mass.

Serving Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, and New Jersey

Production Credit Corporation of Baltimore, Maryland

Serving Pennsylvania, Delaware, Maryland, Virginia, and West Virginia

Veterans Loans

Made by banks but information available at Veterans Administration office in each state.

Farmers' Home Administration

For New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut
2003 Federal Building, Boston 9, Massachusetts

For Maine

31 Central St., Bangor, Maine

For New York

236 W. Genessee St., Syracuse, New York

For New Jersey

205 Post Office Building, Trenton, N. J.

For Pennsylvania

118 Locust St., Harrisburg, Pennsylvania

For Maryland and Delaware

Federal Land Bank, Baltimore 3, Maryland

For West Virginia

231 Chestnut St., Morgantown, West Virginia

Appendix C

Outstanding Farm Mortgage Loans January 1, 1952

	Total	Federal Land Bank	Federal Farm Mortgage	Farmers' Home Admin.	Life Ins. Co.'s	Other
	\$1000	\$1000	\$1000	\$1000	\$1000	\$1000
Maine	22216	2857	275	1417	345	17322
New Hampshire	13086	1653	84	147	10	11192
Vermont	30577	6149	168	695	784	22781
Massachusetts	34082	5911	405	521	681	26564
Rhode Island	4359	844	58	31	42	3384
Connecticut	24780	4422	351	297	1397	18313
New York	172350	27528	1247	2874	11180	129521
New Jersey	57232	7690	583	1717	11179	36063
Pennsylvania	141714	13664	363	4181	6453	117053
Delaware	13269	766	25	242	253	11983
Maryland	62285	4875	168	1658	4483	51101
West Virginia	30667	3962	136	2387	673	23509
Totals	606617	80321	3863	16167	37480	468786

Loans Other Than Farm Mortgage, by Farmers Home Administration January 1, 1952

	Total	Farm Owner- ship	Farm Hous- ing	Production and Sub- sistence	Dis- aster	Emer- gency Crop & Feed	To Co- oper- atives
	\$1000	\$1000	\$1000	\$1000	\$1000	\$1000	\$1000
Maine	4563	812	635	2935	58	123	0
New Hampshire	1097	132	21	918	18	8	0
Vermont	1917	662	42	1070	126	13	4
Massachusetts	989	462	70	342	110	5	0
Rhode Island	140	29	0	86	24	1	0
Connecticut	584	217	74	257	26	10	0
New York	10237	2303	471	6549	561	77	186
New Jersey	4689	1371	384	2290	297	46	301
Pennsylvania	9937	3163	1084	5587	22	81	0
Delaware	518	204	26	262	1	25	0
Maryland	4303	1265	396	2417	23	202	0
West Virginia	4782	1536	987	2186	29	44	0
Totals	43756	12246	4190	24899	1295	635	491

Tables 3, 4, 5, Real Estate Loans to Farmers, January 1, 1952, Farm Financial Review, November 1952, U.S.D.A.

Appendix C (continued)

Non-Real Estate Loans January 1, 1952

	All Operating Banks Including C.C.C.	Insured Commercial Banks Guaranteed Loans	Production Credit Associations	Private Financing Institutions
	\$1000	\$1000	\$1000	\$1000
Maine	7332	6739	2133	173
New Hampshire	3007	2678	544	0
Vermont	11840	10429	4539	0
Massachusetts	5846	5846	2031	162
Rhode Island	1214	1134	442	0
Connecticut	6717	6457	2619	0
New York	77256	77255	24230	85
New Jersey	12640	12640	4285	108
Pennsylvania	56362	56302	12568	0
Delaware	4024	4024	1580	0
Maryland	12296	12296	8356	0
West Virginia	7341	7341	2514	0
Totals	205875	203141	65841	528

From Tables 16-17, Non-Real Estate Loans to Farmers, July 1, 1952
Agricultural Finance Review, Vol. 15, November 1952, U.S.D.A.

Appendix D

Data on Principal Sources of Credit to Farmers*

Source	Maximum Length of Loan	Maximum Amount Loaned	Annual Interest Rate	Maximum Loan as % Appraised Value		Possible Uses for Such Credit
				of Security Offered	of Security Offered	
REAL ESTATE MORTGAGE CREDIT						
Commercial Banks } Trust Companies } Savings Banks }	Usually 15 Years	Indefinite	6%	50-75%	Purchase Real Estate	
			6%	50-75%	Purchase Real Estate	
			5%	50-70%	Purchase Real Estate	
Federal Land Bank } Life Insurance } Farmers' Home Admin. } Veterans Administration } Individuals }	33 Years	\$100,000	4½%	65%	Purchase — Refinancing Improvements	
	5-15 Years	Indefinite	4-6%	50%	Purchase — Refinancing Improvements	
	5-40 Years	+	4-5%	to 100%	Purchase Real Estate	
	10-40 Years	Indefinite	4%	to 100%	Purchase Real Estate	
	Various	Indefinite	4-6%	Various	Purchase Real Estate	
SHORT AND INTERMEDIATE CREDIT						
Commercial Banks } Trust Companies } Production Credit Assn. } Farmers Home Admin. } Merchant and Dealer Credit }	3-30 Months		6%	50%	Usually for the Purchase of Farm Production Supplies	
	6-30 Months		5½-6%	75%		
	7 Years	\$10,000	5%	to 100%		
	1-6 Months	Indefinite	Varies			
Machinery Companies	To 18 Months	Indefinite	6% added to price		Farm Machinery	
Individuals	Various	Indefinite	4-6%	Various	Production Supplies	

*All data must be considered as approximate.

†Housing loans — maximum period, 20 years for loans over \$7,000, 25 years for loans of \$2,500-\$7,000.

